ARMED FORCES EPIDEMIOLOGICAL BOARD

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WEST POINT, NEW YORK

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TUESDAY, SEPTEMBER 17, 2002

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DESIGNATED FEDERAL OFFICIAL:

DR. KILPATRICK

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P R O C E E D I N G S

(8:30 a.m.)

DR. OSTROFF: Good morning. Let me just say how great it is to hold the fall AFEB meeting in such an absolutely beautiful location, and we're really pleased that we were able to get this particular venue for the meeting. And we really want to thank the good folks at West Point for their willingness to be able to host us, and also for Col. Riddle and his fine staff for actually making this happen and for, as I mentioned to him, arranging nice weather so that we don't have to wear rain gear when we go on the morning tour this morning.

Let me introduce Dr. Kilpatrick. As I think some of you are aware, there's a whole contingent of people that are over in South Africa, which has limited the participation of folks from Health Affairs. And so Dr. Kilpatrick, who is the Deputy Director of the Deployment Health Support in the Tri-Care Management Activity in the Office of the Assistant Secretary of Defense for Health Affairs, is the Designated Federal Official for the meeting, and has to make the usual introductory comments.

DR. KILPATRICK: Thank you and good morning, everyone.

As the Designated Federal Official to the Armed Forces Epidemiological Board, a Federal Advisory Committee to the Secretary of Defense which serves a continuing scientific advisory body to the Assistant Secretary of Health Affairs and

Surgeons General of the Military Departments, I hereby declare the autumn 2002 meeting in order.

Again, I'd like to express my appreciation to the people here at West Point for allowing the organization to come up and partake of this beautiful venue. The last time I was up here was to see a lacrosse game when I was in college, so it's nice to see some things don't change. And, again, it's a great place, and I look forward to work with the Board for the next couple of days. Thank you.

DR. OSTROFF: Thanks very much. Why don't we begin by going around the table and having everyone introduce themselves so that everyone is aware of who's here, and we'll ask the people behind me, as well, if they would introduce themselves. So, let's start over on this end with Col. Diniega.

COL. DINIEGA: Ben Diniega, DOD Health Affairs.

LtCOL. FENSOM: Maureen Fensom, Canadian Forces Medical Liaison.

COL. GUNZENHAUSER: Jeff Gunzenhauser, Army Surgeon's Office.

LtCOL. WOODWARD: Kelly Woodward, Air Force Medical Operations.

DR. GRAY: Greg Gray, University of Iowa.

DR. GARDNER: Pierce Gardner, State University of New York, at Stonybrook.

DR. CLINE: Barnett Cline, AFEB Member, Tulane

University.

DR. CATTANI: Jackie Cattani, University of South Florida in Tampa.

DR. CAMPBELL: Doug Campbell, Durham, North Carolina, private practice.

DR. BERG: Bill Berg, Hampton Health Department, Hampton, Virginia.

DR. SHOPE: Bob Shope, University of Texas Medical Branch at Galveston.

COL. DINIEGA: Steve Ostroff, from the Centers for Disease Control and Prevention.

LtCOL. RIDDLE: Rick Riddle, AFEB.

DR. HERBOLD: John Herbold, University of Texas School of Public Health.

DR. HAYWOOD: Julian Haywood, University of Southern California School of Medicine.

DR. LeMASTERS: Grace LeMasters, Department of Environmental Health, University of Cincinnati College of Medicine.

DR. MALMUD: Leon Malmud, Temple University School of Medicine.

DR. MORRIS: Glen Morris, University of Maryland School of Medicine.

DR. PATRICK: Kevin Patrick, San Diego State University School of Public Health.

DR. POLAND: Greg Poland, Mayo Clinic, Rochester, Minnesota.

DR. SHANAHAN: Dennis Shanahan, Injury Analysis, Carlsbad, California.

CAPT. SCHOR: Ken Schor, Headquarters, Marine Corps.

CDR. LUDWIG: Sharon Ludwig, Headquarters, Coast Guard.

COL. STAUNTON: Michael Staunton, British Medical Liaison Officer.

CAPT. YUND: Jeff Yund, Navy Bureau of Medicine and Surgery.

LtCOL. RUBERTONE: Mark Rubertone.

CAPT. SCHNEPF: Glenn Schnepf, Navy HIV Program.

MS. SMITH: Edith Smith, Navy HIV Program.

DR. COATES: Don Coates, Air Force Base Command Surgeon's Office.

COL. GARDNER: John Gardner, Deployment Health Support at Health Affairs.

DR. CRAWFORD: Leo Crawford, Air Force Research Laboratory, Brooks Air Force Base.

DR. VAUGHN: David Vaughn, Military Infectious Diseases Research Program.

CAPT. BOHNKER: Bruce Bohnker, Navy Environmental Health Center.

MS. FOPPA: Joyce Foppa, Uniformed Services University.

DR. BRAMZINSKI: Bob Bramzinski, Medical R&D Liaison from the Navy Surgeon General's staff.

LtCOL. COX: Kenneth Cox, Air Force Epidemiology Services.

DR. MacINTOSH: Vic MacIntosh, Air Force Medical Operations Agency.

LtCOL. GIBSON: Roger Gibson, Health Affairs.

LtCOL. NEVILLE: James Neville, Air Force Institute for Environment Safety Occupation Health Risk Analysis at Brooks Air Force Base.

DR. HORAY: I'm Keith Horay, I'm from the Army Center for Health Promotion Preventive Medicine.

DR. FU: Jeffrey Fu, Medical Scientific Affairs with Merck Vaccine Division.

DR. LEE: Brad Lee, the MEPCOM Surgeon.

LtCOL. EDMONDSON: Mauhee Edmondson, OSD Accession Policy.

DR. BENJE: Mike Benje, Health Affairs.

DR. OSTROFF: Very good. And my understanding is that because of many different activities that are going on down in Washington at various Headquarters, that there will be a number of people coming back and forth over the course of the meeting, and we may have some changes in the scheduling, but

I'll leave that up to Col. Riddle to discuss further.

We really do want to thank Col. Craig, who I think will be coming later on this morning, and the staff of the Keller Army Community Hospital Department of Preventive Medicine and Wellness for everything that they've done to make this meeting happen, and also to thank LtGen. Lennox, who is the Commandant and the USMA Superintendent, for hosting this particular meeting.

We have a very nice tour scheduled for later on this morning, and we'll leave it to Col. Riddle to give the details of the tour, but suffice it to say that there will be three different buses which will take us to one particular location, and then I guess we'll be walking from there. We need to be out in front of the hotel at 9:45 a.m., sharp, and we can't be at this fine institution without being very punctual.

So, with that, I'll turn it over to Rick.

LtCOL. RIDDLE: One thing I want to do this morning is to thank Ms. Jean Ward and Ms. Karen Grawley and Ms. Lisa Mims for all the efforts supporting AFEB. Karen leaves triplets at home and travels with us and makes the arrangements, and Lisa travels and helps support the Board, and I think we really owe them a kind of round of applause.

(Applause.)

For the tour this morning, we need to divide up into three equal groups. The Chairman of the Department of History and some senior members on his staff are going to give us

about an hour and five minute walking tour, and what I'm going to ask is for the Subcommittee Chairs and Dr. Ostroff to each be on a separate tour group and, because we're not going to see those individuals back over here, we have some Certificates of Appreciation that I would like for you all to present to them, in Dr. Patrick and Dr. Atkins' absence, if you could do that. So, if you could be on one tour, Dr. Herbold on one tour, Dr. Ostroff on another tour, and then I will be on one, Lisa will be on one, and Karen will be on one with you. So, if we could do that and offer them our appreciation over there.

The next AFEB meeting is going to be at the Phillips Space Conference Center at Kirkland Air Force Base in Albuquerque, New Mexico, and that's going to be on 18 and 19 February. The theme of that meeting will be on occupational health and safety. Professor Sue Baker, from Johns Hopkins, is going to do some presentations, and Bruce Jones, from CHPPM. It looks like we already are going to have a fairly packed agenda, with two, three, maybe four formal questions before the Board, one dealing on public Quantifuron (phonetic) and tuberculosis from the Army Surgeon General's Office Oversight for Guides, and Pat Kelly from ASD Health Affairs, and potentially a couple more questions, and we have nice late presentations on occupational health and safety within DOD for the Board.

Also, I would like to remind you to please sign in on the sign-in sheet with Lisa outside. That's a requirement for

committees. We have a roster of attendees.

Refreshments will be available out here both morning and afternoon. Lunch for both days is going to be on your own. We didn't have a good capability to cater a lunch, and there's a lot of places here just right off, if you want to walk, lunch here at the Thayer. If folks would want to go over to the Officers Club and drive over there, or whatever you might want to do, we can do that. But then we will have a dinner tonight, and the dinner tonight we will order off of the menu. We have a sample of the menu out front here, but we need to have a count of those individuals who want to attend. And they do have a nice restaurant here and a good venue for the dinner this evening. We'll meet in the lobby at 6:45 and try to be in there at 7:00 o'clock tonight. And for dinner tonight, for the tour this morning, spouses are absolutely welcome and, if they don't know, please let them know, and if they can meet out here at 9:30 for 9:45 departure, that's totally appropriate.

Restrooms are upstairs, so you have to go out, over to the corner over here where the gift shop is, right up the steps, and the restrooms are right there at the top of the steps.

For telephone, fax, copies or messages, just please see Lisa or Karen and we'll take care of that for you. Also, remember, the meeting transcripts, we'll try to have those up on the Website in probably three to four weeks, but we'll have the slide presentations up on the Website as quick as we get

back.

Like Dr. Ostroff mentioned, we do have some agenda changes. Things are happening fairly quickly, and a lot of stuff going on within the building. Col. Ken Cox is going to provide the Deployment Surveillance Update briefing in place of LtCol. Dave Jones, and that will be after the break this afternoon, and Ken's got a real good presentation, looking at DNBI for Operation Enduring Freedom, which the Board asked for last meeting.

Col. Miller, from the Assistant Secretary of the Army Installation Environment is not going to be able to be with us, and Capt. Winkel from Reserve Affairs is not going to be able to be with us. John Grabenstein is back at the office working. I left the office at 9:30 on Friday, and John's car was still there. I think ours were the only two cars in the parking lot. And so he is really busy, but Col. Dana Bradshaw is going to be here and do his presentations tomorrow on the anthrax program and smallpox preparedness. And, also, Capt. Glenn Schnepf is going to present the Navy HIV program tomorrow instead of Capt. Yund.

So, again, hotel lobby, 1845 tonight. Dinner is open to all attendees. We'll order off of the menu and, if you can let Lisa know before 1:00 o'clock this afternoon, that would be good.

DR. OSTROFF: Very good. You got through that in record time. So, having said that, you're next on the agenda. This is apparently an item that we haven't done in a number of

years, which is that the Executive Secretary gives an update on Board activities, and we thought that this was a good opportunity to reinstate that, and take it away.

LtCOL. RIDDLE: Thanks. This used to be an old standard agenda item, and the Preventive Medicine and officers and others have commented that it would be a good idea to get an overview of what the Board has accomplished and is doing on an ongoing basis in an update of where we are with some of the recommendations. And, also, they wanted to have a chance to beat me up a little bit because Dr. Berg has been beating them up pretty bad.

DR. OSTROFF: Let me just interrupt by saying that your presentation is in Tab 3.

LtCOL. RIDDLE: Yes, Tab 3 in your notebooks, and the handouts are back there on the table. Next slide, please.

(Slide)

One of the things is, as you know, Dr. Ostroff is the Board President. The President of the Board is elected by the Board members, and Dr. Ostroff replaced Dr. LaForce.

Currently, we have 18 appointed members to the Board. The Board can have up to 20 full-time members, and we have two consultants on the Board. We do have one appointment decision pending. And a lot of people don't realize, but it takes about a year and a half to bring an individual onto the Armed Forces Epidemiological Board, and individuals are nominated

by consensus through the Service Surgeons General. That nomination is endorsed by the Assistant Secretary of Defense for Health Affairs to the White House, and the White House actually makes the final approval on the appointment of Board members. It involves an extensive financial closure report, and an ethics review, and a conflict of interest review, and it is a fairly extensive process, and the Board members have to put up with a lot in intrusions into their privacy and the long, drawn-out process to get on the Board, and we certainly appreciate everything that they do, and the travels. And a lot of people don't realize it is totally uncompensated. All we are able to do is reimburse them for their travel expenses, but they receive no compensation for their service to the Board, and they put in a lot of time, as you'll see as we get into this and during Dr. Herbold's presentation this evening. They put in a lot of time looking at these issues that are brought before the Board.

I wanted to take a look -- actually, you can't see it down here -- but for expected rotation, we do have one individual expected to rotate off the first quarter of FY03. We're going to hold another Selection Board in November. So, if anybody has any nominees that they would like to get to me to be considered for selection, please do that.

The way we do that is we assemble packages. We have about ten objective criteria that we rate individuals against, and the Selection Board is made up by a Preventive

Medicine Officer from each of the Services, and a representative from the Office of the Secretary of Defense for Health Affairs. They review our nomination packages, rate these individuals, and then we look at those scores and rank them, and then make the nominations from that. And it's a fairly competitive process.

During our last Board, we may have had, I think, 23 or 24 individuals compete for one position on the Board, so it is a very competitive process. Next slide, please.

(Slide)

Looking at our subcommittee membership, right now, this is the Subcommittee on Infectious Disease Prevention and Control, which is our largest subcommittee and historically has been one of the major functions of the Board.

You can't see down here on the bottom after Dr. Gray, but also on that subcommittee is Dr. John Glen Morris and Dr. Jacqueline Cattani is a consultant to the subcommittee. Next slide, please.

(Slide)

DR. OSTROFF: Don't forget Dr. Poland.

LtCOL. RIDDLE: Yes, Dr. Poland is on that subcommittee.

On the Subcommittee on Environmental and Occupational Health, we have Dr. Herbold, who was just recently appointed as the Chair of that subcommittee by Dr. Ostroff, Dr. Campbell, Dr. Shanahan, Dr. Malmud, and below Dr. Malmud, who you

can't see down here, is Dr. Grace LeMasters.

And we're going to try to pick up probably two members with some specialty in environmental and occupational health at the November meeting. Next slide, please.

(Slide)

On the Subcommittee on Health Promotion and Maintenance, our candidate that we submitted for nomination recently would be for this subcommittee, and chair of this subcommittee is Dr. Atkins. We have Dr. Alexander, Dr. Patrick, Dr. Runyan, who is not with us today, she had a conflict in her scheduling. This was Dr. Runyan's last meeting, so she will be off of the Board and will create a vacancy that we will fill. Also, Dr. Forster and Dr. Haywood, who is a consultant to this subcommittee. Next slide, please.

(Slide)

As far as our Nominations Committee -- I alluded to this a little bit earlier -- we did have a meeting in June 2002. We had two nominees and one alternate that were selected and are currently going through the process right now of getting the Surgeons General's endorsement and through ASD Health Affairs, the financial disclosure review, and we will submit those to the White House later on this year. And one of those individuals is an injury specialist, and the other one is a psychiatric epidemiologist, and if both of those get approved, we hope to bring them on the Board next year.

As our next meeting, as I spoke to earlier, is in November of 2002, and which we'll look to select two, possibly three, more individuals for nomination to the Board, and we're going to try to focus on occupational and environmental health, to bring a couple of new members on that subcommittee. Next slide, please.

(Slide)

We have a recurring meeting schedule for the Board which we established year to try to help out with planning for individuals, and that recurring schedule is February, May and September, and it's the third Tuesday and Wednesday of those months. In February, we were out in San Diego -- and I think the San Diego meeting was probably one of the best attended meetings that we've had for the AFEB. We had about 110 folks at that meeting. We had over 100 at Gaithersburg, and I think we have about 65 of 70 here at West Point.

In this time frame, we have also had several other meetings. The AFEB Select Subcommittee, at the request of Dr. Winkenwerder, looked at anthrax vaccine and reproductive outcomes associated with anthrax vaccine. We held two teleconferences and provided comments and recommendations back up to Dr. Winkenwerder.

The subcommittee on Environmental and Occupational Health, you'll hear a little bit about what they've been doing this evening from Dr. Herbold, but they have had meetings at

Brooks Air Force Base. They also traveled up to Massachusetts Military Reservation. And Dr. Herbold spent an additional two days at Brooks Air Force Base, in addition to those two meetings.

Like I said, we have our upcoming meeting in Albuquerque, New Mexico. We're going to try to have maybe an occupational health and safety theme there, and we expect a good meeting. The conference facilities are great, and another great venue for an AFEB meeting. Next slide, please.

(Slide)

In 2002, so far we've had ten AFEB recommendations, so it has been a very busy year for the Board. The Recruit Assessment Program recommendation was just signed out. We've had the recommendation on therapeutics against biowarfare agents, and I was recently called over to the Pentagon and Dr. Anna Johnson Winegar, to brief her and her staff and the Joint Requirements Office staff, on this recommendation right here, and I think that they are moving forward to implement that recommendation to establish joint requirements and to look at the issue of not only vaccines against biowarfare agents, but also therapeutics, and I think they are also looking to revise the current DOD Directive on vaccines to include overall therapeutics and other agents against biowarfare, and include a bigger role for the AFEB than we've had in the past, looking at that particular issue for the Department.

We also did immunizations against biological

warfare defense, and in that one the recommendation on smallpox was given to the Department. Dr. Ostroff has been participating in a smallpox senior review group. He actually has a meeting on Friday with senior policy folks at the Pentagon, and they've taken our recommendation and incorporated that in the overall planning for smallpox preparedness within DOD.

We did 07, a deviation from anthrax, the vaccination program against anthrax. The medical screening for accession programs, the physical examination, hemoglobin, electrocardiogram and panoramic have resulted in significant policy changes within the Department, in streamlining and elimination of these tests that were not deemed to be valid tests for accession. And right now, they are working the issue on the physical examination issue of how to use the Board's recommendation and eliminate a lot of the redundant physical exams that occur primarily in the ROTC and the Officer Recruit Program.

Below that one, which you can't see, is 01, which is prevention and minimization of adenovirus infection. So, it's been a very busy year for the Board. Next slide, please.

(Slide)

In addition to these ten, we have three recommendations that are currently in draft, that we're working, which is 13 recommendations for a year, which has to be near the top as far as productivity for the Board, if we look back in

history for recommendations that have been worked in any single year. So, it has been a very busy year, and the Board has been very busy.

The pending recommendations is this risk assessment of low-level phased array radio frequency emissions. We have screening for Sickle Cell Disease at accession, and infectious agents transmitted by transfusion of blood products. Dr. Shope has a draft recommendation on this one for subcommittee discussion at this meeting. The Prevention Subcommittee has a draft recommendation on Sickle Cell Trait for discussion, and I think the Environmental Subcommittee, Occupational Health Subcommittee, is very close to drafting a recommendation to address two of the questions that were brought to the Board. The other question we can't work on because we don't have a product that we've been asked to review. So, we're very close on these three also, and it's taken a tremendous amount of work.

We spent probably an hour and a half on a teleconference the other day, on Sickle Cell Disease at accession. This risk assessment for phased array radio frequency energy emissions, I be we've reviewed 75 pounds of paper and hundreds of articles and studies that have been done in the work that the Board has put in, coming up to a recommendation here. Next slide, please.

(Slide)

As far as current questions before the Board, we

only have one question on the agenda for this meeting, and we kind of purposely left it a little bit open so that we could catch up a little bit, a little bit of a break, we have a little bit more time built into the agenda for presentations because we have some very good update presentations before the Board, but that probably won't hold for the winter meeting in February, which we may have three, maybe four, questions which will be significant questions for the Board at that time. Next slide, please.

(Slide)

Aw, shucks, you can't see this, but if you could see this, one of the major initiatives that we've taken in the office is to try to build a robust Web presence for the Board, and we've put all of the recommendations from 1954 forward, which is 400-plus recommendations, and all of the reports that have been done by the Board, in a searchable index on the Website so anybody can pull those up.

For meetings, we put all of our presentations and the transcripts, and one of the projects we're working on right now is actually to digitize all of the past transcripts and get those up on the board because, believe me, when we were looking at this smallpox issue, going back to the Board transcripts and the discussions from years and years ago on evaluating what we can expect as far as a side effect profile, reactogenic profile with a smallpox vaccine and our population, was very important to

our discussion. So, these are important historical documents, ad we are trying to work and get those up on the Web.

In the next month, we should have the 50-year history of the Board up on the AFEB Website, and also the history of the commissions up there in PDF files, where you can go through and look at those. We always have an index of our Board members, and any comment is certainly welcome to how we can enhance that Website, provide material up there for individuals, working materials when the Board is doing their work, anything like that we're certainly open to, and we'll try to work and do that.

Also, a significant enhancement that we've had with the Board is Karen and Lisa's help through contract that we manage to help provide support and everything that it takes to make one of these meetings happen, which is very important. You need to have a comfortable working environment, and we try to do that.

So, that's my presentation. Any questions that you might have? Yes, sir, Dr. Berg?

DR. BERG: Bill Berg, Hampton Health Department. Rick, will any of the previous nominees for positions on the Board rollover, or will it be fresh, and if anyone has any names, they have to resubmit them?

LtCOL. RIDDLE: What I do is of the -- to go back and to get nominees for the Board. When I first came on, I sent

a letter requesting nominees to every Dean of every accredited school of medicine and public health in the United States, which I think was 183 when I sent those out. And so I get those nominees in, and I keep those nominees together, along with any other nominees that are submitted, and every Nominations Board I go back to those individuals and ask them again if they are still willing to serve on the Board, and we leave their names in the pile of individuals who are considered, and add individuals who are recently nominated and subtract those that don't want to be considered or may now be members of other Federal advisory committees or something like that.

That's what happened to Dr. Landrigan, is he joined another Federal advisory committee, and DOD is very strict. They only allow an individual to serve on one Federal advisory committee, so you can't serve on multiple Federal advisory committees. And Dr. King Holmes, who Dr. Alexander has nominated, is currently serving on another Federal advisory committee, so he was eliminated from consideration. But I continually seek nominees, and I actually have a nice slate of nominees in the occupational and environmental arena coming in, probably 15 of who have not been considered before, but we're all the time trying to refresh that pool of nominees.

COL. GUNZENHAUSER: Col. Gunzenhauser. Rick, could you just comment, after the Board makes a recommendation, what's the process of how the Department takes those

recommendations and tracks decisions relating to them? How does that work?

LtCOL. RIDDLE: Well, as you know, it is only a recommendation. In other words, the Board does not carry the force of policy. But if you look back at the recommendations that have been made by the Board, many, many of those recommendations have resulted in policy change.

So, what we look at is usually the individual who brings a question to the Board, we will work with them literally as the consumer of that recommendation. We want to make sure that their questions have been answered, that we stayed in the lane per se, of the context in which the question was asked to the Board, and then we would provide that recommendation back to the ASD HA, Dr. Winkenwerder, and each of the three Service Surgeons General, as the primary addressee, along with a myriad of courtesy copies to those people that may have a dog in the fight on that recommendation.

And then, really, it's up to the Service or up to Health Affairs or the individual that asked the question, to take that and either to act on it or to take it in confidence and say, "That's all and good, I appreciate the voice of the experts, but because of --- I'm not going to be able to do anything with that". But part of the role of the Executive Secretary and what I try to do is if you look at the Board recommendations, I think that the Department gets very, very good value for the questions

that are brought and the recommendations that are given, and part of that not only as a scientific basis. In other words, we do an extensive literature review. We try to make the recommendation based upon the best available scientific information, but also the military relevance that the Board brings to the issue is it makes -- I mean, it makes no sense for the Board to make a recommendation that is operationally irrelevant to the Department.

So, part of that process is to bring the Board to venues just like this at West Point, to get an idea of what goes on with the cadets here at West Point, so when you are making a recommendation on accession issues, you can relate to that, which is better than you're going to get with the standard academic input who have no idea of what goes on within the military and what the constraints are that you have to operate in.

So, that's kind of a long answer to a short question, but the recommendation is taken back in to the Department, and it's up, really, to see whether or not they want to implement policy change.

Now, sometimes, you know, the Board is kind of used as a body to assist with that change in policy, where an individual may get -- Health Affairs or whoever -- may get a recommendation back. They may do a followup. They say, "As part of that recommendation, I would like for you to have XYZ present at the followup meeting, and have them show you what they've

done, which you said was recommended to be done and which we asked them to do, so that you can provide input and help with the evolution of that particular issue and implementation of that issue, from a policy perspective". But folks that haven't worked policy within the Department, you don't expect anything to happen overnight. I mean, it's a year to a five-year push -- and some things are very difficult, like the Sickle Cell Trait. That has a 30-plus-year history within the Department. The Board has made, I think, three previous recommendations on Sickle Cell Trait, and the subcommittee, in their deliberations on the issue, has been very enlightening in that we can just say what we said before, which is what everybody else has said before, or we can go out of the box a little bit and make a recommendation that we think will result in substantial change, and we work with the customer on that -- and I think folks will be happy with what comes out on that recommendation.

DR. GRAY: Rick, I think that I speak for a number of people who have been in and around the Board for maybe 15-20 years, and I just think we need to commend you for the organization that you've brought to the AFEB. I think this committee is stronger than it's ever been before and, as evidenced by the increased attendance and productivity, I think it's much more successful.

And I guess I'd finally want to say that we greatly appreciate the attention, the senior policy officials who

have attended the meetings, et cetera, that you have brought to the Board and feel like, at least from my perspective, that it's a much more valued organization than it was some years ago. So, thanks.

(Applause.)

LtCOL. RIDDLE: Any other questions? We have quite a bit of time for discussion. Other issues?

DR. OSTROFF: Well, I'd just like to echo what Greg just said, which is that my hat is off to you and the staff there, to be able to juggle so many balls and keep them all moving forward. And I know that much of the activity that we've had over the past year or two is a direct result of Col. Riddle's efforts to bring issues to the attention of the Board. Certainly from my perspective, I've had the perspective of trying to keep the Board as busy as possible because I think that's what we've attempted to do. We've attempted to bring the best expertise to the Board so that we can address the whole variety of issues that confront the Department. And I must confess that I continue to be amazed at how many different issues can come up over the course of the year.

And speaking, I'm sure, for all of the members of the Board, we're here to assist, as I've often said in the past, and the more things that you can bring to us, the happier that we'll be to be able to provide feedback and input to you because I know sometimes it's hard to get outside expertise and opinions

for many of the things that go on within the Department, and the Department of Defense can be rather insular in terms of looking for assistance. And so, since we, as an officially mandated body within the Department of Defense, always feel free to call on us for any issue that you may want some additional assistance with.

I guess from my perspective, one of the questions that I would ask is are there things that traditionally the Board has done which we're not currently doing, either in the way of reports or other roles, which you think potentially we may want to move into over the next year or two?

LtCOL. RIDDLE: And I would say yes, and part of that is we've gone back and tried to look at some of the recurring type issues that were asked of the Board, and what you'll see on the agenda today is a presentation by Col. Neville on the Board's review and comment on the DOD Influenza Program. We decided to go ahead and bring that issue to the Board at this meeting, but part of the discussion should look at is there better value in bringing it to the Board at an earlier date so that recommendations can be more timely or result in some other additional changes. So, that should be part of the discussion this afternoon.

One of the things and one of the questions that you saw up there on the agenda for the February meeting is Dr. Winkenwerder very much so has great respect and faith in the Board and the recommendations and insight and capabilities, and

he's asked us to provide a role as a public health advisory committee to the Global Emerging Infections System that Pat Kelly runs, which is a worldwide system with DOD looking at emerging infections and overall disease surveillance.

There's also a question that is currently pending decision by Dr. Winkenwerder to do a very similar thing with the DOD Deployment Health Research Center and the Deployment Health Clinical Center, which is Megan Ryan's group out at NHRC in San Diego and Chuck Engel's group up at Walter Reed, to also serve as a public health advisory body to bring individuals into a common forum with presentations and to generate ideas and offer comment and guidance, and some of the best ideas from some of the best academicians that are out there to be brought in and considered as part of those DOD programs.

So, I think those very important issues will result in some increased tasking and maybe an extra day for a Select Subcommittee at each one of the upcoming meetings or a separate meeting, whatever the Board sees the best way to execute that. But I see those as very important issues because, if you really go back to the history of the Board -- I mean, the Board used to have a budget, execute studies, the history of the commissions, be very involved with infectious disease and infectious disease research, but here most recently the Board has been asked to tackle some of the toughest controversial and political issues out there that had been unable to be resolved.

And so to kind of get back a little bit and provide more -- instead of kind of a tactical resolution, some more strategic vision on some key assets within the Department I think is kind of a change that we will see upcoming which will result in kind of some routine standard agenda items that we have.

But then, also, for the Preventive Medicine Officers and others -- a lot of people don't understand anybody can get a question to the Board, but you need to bring that question through your Service Surgeons General, and you do that through their Liaisons to the Board or through the Assistant Secretary of Defense for Health Affairs, and I try to work that the way I can. So, that's one to maintain some control over the issues, to make sure that you have senior leadership visibility, but if you do have some particular issues that are important, that could benefit from review and comment by the Board, we certainly do welcome those.

And it's important for -- and there are folks that we've kind of left out here -- all of the Service and academicians that we bring in to provide expert testimony before the Board and present their programs -- you know, it's hats off to them to take the time from their schedules to put those presentationes together and to travel to the meetings and to bring the facts before the Board because we need to be very comprehensive and accurate in the material that we present -- you

know, trash in/trash out, good science in/good science out -- so that we do have very good recommendations that come out.

DR. OSTROFF: How much budgetary flexibility do you have to be able to do some of these additional tasks?

LtCOL. RIDDLE: The Board, when it was originally established under the Secretary of the Army with administrative support under the Army Surgeon General many years ago, was given an expected budget of $150,000. The Board has operated on, in recent history, as little as an annual budget of $27,000. This year, we will probably run a budget of about $102- or $103,000. So, literally, we have a lot of flexibility as far as what we have because those monies have been inflation-adjusted over time, that $150,000 that was put into the DHP, and so Gen. Peak and the staff at the Army Surgeon General's Office really have been -- they just bend over backwards to assist the Board and to provide for the support that the Board needs. And when we have special needs, when special subcommittees are established to do extensive projects, like the project I think Dr. Poland worked on with vaccines, or the project with the injury surveillance, we actually go back to the Service Surgeons General, get a consensus that we expect we need $125-250,000 to do this over an 18-month period of time, and get support from them, and then are able to execute that.

So, currently, we're operating well within the budget, the historical budget for the Board, and we do have good

flexibility. Yes, sir.

And we're always open to good ideas. Dr. Herbold had the good idea of the lapel pin for the Board members, and so we have that. And so we do -- we really do fight for feedback. And a lot of the Board members have been very helpful in the design of the Internet site, the materials that we provide for you, the read-aheads, those kinds of things. Sometimes we don't get everything up until the time of the meeting, but we do try to provide those in a timely manner for folks to take a look at and review. And electronic communication has just become such an essential part of what we do as far as the coordination of the recommendations and comment back to me for incorporation and change.

DR. OSTROFF: Other questions?

(No response.)

Thank you for the presentation. Maybe what we can do, Greg, if you don't mind, one of the things that has recently come out as a report from the Institute of Medicine about the Department's vaccine development and production process, and Dr. Poland was a member of the Review Committee for the IOM. And since the report literally just came out last week, I thought since we do have a couple of minutes before we take the break at 9:30, that maybe Greg could give us some comments and some thoughts about the findings because many of the recommendations that came from that report deal with issues that the Board has

been very concerned about for a number of years. And so I was certainly glad to see it, and certainly glad to see some of the issues that were raised, and we thought we'd take the opportunity while you are here, for you to give some background and some thinking as to what the recommendations were.

DR. POLAND: Sure. Thank you, Steve. I wasn't prepared to do it so maybe, with your permission, what I'll do is give some background comments, and then I'll retrieve the Executive Summary that spoke to the recommendations that were made, and maybe later in the meeting when we have two or three meetings, I could review those.

Well, the process almost a two-year process. It was a committee of the Institute of Medicine looking at Force protection issues, in this case related to vaccine development, and we spent a lot of time being briefed by the senior leaders of MIDRP, the Military Infectious Disease Research Program, primarily through the Army, and understanding how a scientific idea moved through to the point of product development. And what became very clear was two major issues that are not a surprise for most of the people around this room, is that there was a disconnect between the research base and the development base. They are very different commands, very different budgets. And to our surprise -- but, again, maybe not to some of you -- the budgets that were in place for the science base occurred year-by-year. So there were no multi-year budgets.

Research groups would form and try to deal with an issue around a one-year budget, and then be forced to compete again for additional funds, which may or may not be there, depending on what the priorities were for the following year.

So, in this process of understanding that, one of the major things that came about is that, particularly in vaccine development, it really has been a "poor cousin" to the process that is used whereby, let's say, a new tank needed to be acquired, a very different process -- and in particular on the science side, no very senior leader who was the champion for, in this case, vaccine development.

So, I will get hold later in the meeting of the actual recommendations and read those to you, but they revolve around those primary issues.

And I might say that report -- the pre-publication came out the end of last week. I believe it is on the IOM's Website. And the final report, I think, is to be delivered this week or early next week.

DR. HAYWOOD: Greg, were you the only individual who had continuity with the process in this body?

DR. POLAND: Yes, that's correct.

COL. DINIEGA: Wasn't Marc on the committee also -- LaForce?

DR. POLAND: Marc LaForce was, yes, but he's not on the committee now.

COL. DINIEGA: Right. A couple of things to remember about the report: No. 1, it was a question asked and funded by the U.S. Army Medical Research and Materiel Command. So, the question went from the Commander, MRMC, to the IOM, and the report goes back to the Army side at MRMC.

No. 2, the vaccines they discussed were for endemic diseases and no BW, and the processes are different in the research, development and acquisitions for those vaccines.

And the third point I want to make is that the military does not take vaccines to licensure, they have to find a commercial partner to do that. That's why we have problems with Orphan vaccines because there is no commercial market in the U.S.

DR. HERBOLD: But a point of clarification -- or a question, because I think this is interesting to explore. In life cycle management of weapons systems, there isn't necessarily a customer out there at the beginning, and we get weapons systems funded and developed. So, I can understand that we take vaccines -- we have to find a commercial company to develop vaccines, but we also have to find a commercial company to build missiles and tanks. What's the difference?

DR. OSTROFF: The difference is the licensure by the FDA of the vaccine.

DR. POLAND: And the return. I mean, maybe one counter-example to what hasn't been very successful in that regard was Hepatitis A vaccine. But for the most part, they are

developing vaccines where the market is pretty small, and industry is not willing to -- what would be some examples -- Adenovirus would be a good example where there just wasn't enough money for a company to incur the liability and the cost that it would take to develop a product license application and put it in front of FDA. That would not be the case, I don't think, with most equipment.

DR. BERG: Ben, is there any thought being given to changing the position so that the military does take vaccines to license? In the old days when we made titus vaccines and things like that, none of this was an issue. Now, considering the anticipated problems with anthrax vaccine, and smallpox, until it's licensed, it might be worth revisiting that to see whether, in the long-run, it would be -- there are benefits to having the military get the vaccine, take the vaccines all the way through to license, just to avoid problems with having to get informed consent and similar issues. Is there any thought even on the horizon of the military changing its position and taking these to licensure?

COL. DINIEGA: In my position now, I'm sort of peripheral to the research issues, but what I understand is happening -- and Col. Vaughn, from the Military Infectious Disease Research Program at MRC, is here, and he can jump in anytime he wishes to, open invitation -- but my understanding is, taking the model of weapons systems and tanks, et cetera, the

other option that is under consideration is the Government-owned/Government-run facility, production facility, that they would have to abide by all the rules of the FDA, or going like you did with the Joint Vaccine Acquisition Program for BW vaccines and having contractor-owned and contractor-operated -- that type of a contract.

And in the JVAP program, they have done it, the contractor-owned and contractor-operated system. The question is, which is more advantageous to the Services and to DOD. So, those are in discussion, and I don't think they are at a point of making a decision.

What has helped, I think, is since 9/11 and the anthrax attacks, it's no longer just a DOD problem, it becomes a national problem, and I think that is giving additional impetus to consideration.

DR. GARDNER: Pierce Gardner. Even though -- even getting it to licensure, however, doesn't seem to be the end of the problems, given all the difficulties with our licensed vaccines. CNN this morning was talking about the vaccine supply issue that are going to cause revisions in the recommendations this year. Marc LaForce, who sends his greetings, is very involved in meningococcal issues, and there's not enough meningococcal vaccines to implement policies that are already on the books for Africa. So, some of the issues of profitability, we expect vaccines to be sort of a Mother Teresa approach, I

think we shouldn't get too -- these are done for public good and not for profit. I always say the Lipitor advertisements that we see, advertising I think $1,000 a year, whereas the $15 influenza -- or $5 influenza shot doesn't ever get any attention. So, somehow we have to build some incentives for the manufacturers to take on those things which are much more cost-effective than some of the other things that we all seem to accept with great comfort.

DR. POLAND: One little piece of trivia related to what Pierce just said, one of the statistics that we heard was that all of the profit made on all of the vaccines made by all of the manufacturers in the United States was significantly less than the profit made on Prilosec alone, on each year's sale of Prilosec. So, it is an issue.

DR. OSTROFF: And seconding what Pierce said, Adenovirus was a licensed vaccine, so it wasn't a matter of having the licensure, it was a matter of having somebody to actually produce it. And I was pleased to see in the report that one of the major examples that was cited as a case study was the problems related to the Adenovirus vaccine. And the other recommendation or comment that was made in at least the Executive Summary, which I had a chance to read, was that the Department really does need to re-examine its current policies related to investigational vaccines because I think, as we will soon be seeing related to smallpox, it just significantly ties up the

ability to reasonably move these things along and implement programs. So, it was nice to see that recommendation there.

DR. POLAND: Steve, I wonder is it possible to get copies of the report for the Board or --

LtCOL. RIDDLE: Yes. I talked to Col. Vaughn, and as quick as they get their copies in -- I think you ordered 100 copies -- we will be able to get copies and mail those out to the Board members.

DR. POLAND: We'll have a signing at the next --

(Laugther.)

DR. OSTROFF: It's 9:30, so I think we're scheduled to take a 15-minute break. Ben?

COL. DINIEGA: I have a question for the people from West Point. Is it a hats area or a no-hats area?

LtCOL. RIDDLE: It's a hats area. You need to wear your hat. And if you could divide kind of evenly, about 17 per bus for the three different groups, I think that would work out well.

DR. OSTROFF: 9:45, sharp.

(Whereupon, a break was taken for a tour of West Point.)

DR. OSTROFF: We need to get back on schedule because now we're running a little bit on the late side. Let's see if we can take a minute and gather up people and get started.

LtCOL. RIDDLE: I wanted to make one point. Col.

Edmondson came up to me over the break and we were talking about the impact that the Board's recommendations had, and she said just within the Army, with the policy changes that were made subsequent to the accession recommendations earlier this year, that over 10,000 Army recruits had been impacted through streamlining and elimination of unnecessary accession procedures like we had with ECG, the Panorex and the other ones. So that was an instance where the Board made a recommendation and a policy change was very quick, and has impacted a large number of recruits in a short period of time.

DR. OSTROFF: Thanks very much. I think all of us would agree that that was just a great tour, although not nearly long enough. I'm sure there's lots more that we could be seeing, and we thank you for arranging the wonderful weather, Col. Craig and Col. Smith, and now we get an opportunity to hear about cadet health from the West Point perspective.

I think, Col. Smith, you're going to go first?

LtCOL. SMITH: That's correct. Thank you.

Is there anyone in the group did not come through Cadet Health Center earlier today? I don't use microphones, I can't do it.

DR. OSTROFF: Let me just ask, is that a problem for the Transcriber because everything from the meeting gets transcribed, and if you're not near a microphone, she can't hear.

LtCOL. SMITH: Good afternoon, everyone.

(Laughter.)

My name is LtCol. Mark Smith. I'm a physician. I'm a family practitioner, Board certified, and I have the most extraordinary job on the planet, and I really believe that. I've been in the Army over 20 years and spent well over the first half of it as an Artillery Officer -- you know, hard duty in Germany, Texas, in the field, sucking it down during some tough times back in the '80s, and came here to West Point to teach and mentor cadets as a commander of a company, and finally fulfilled my lifetime dream, which was to become a physician.

I went to med school over in Westchester County, at New York Medical College, and stayed out in Stamford, Connecticut, at a lovely little community hospital where there were no surgeons and internists and Ob/Gyns and residents, and then came back in the Army. And, you know, you always make jokes about the military not doing the right thing. Somebody had enough foresight to ask me, "Would you be interested in taking care of the cadets?" And I went, "Yes." And so that's the short story of how I came to be where I am right now. I tell my friends that I came here to find a niche, and ended up creating an ecosystem.

What an extraordinary population of people to deliver care to, if you are willing to step outside of that delivery mode, the standard template of medicine and its culture today, which really is geared toward taking care of sick and

injured, and we struggle every day with how to preempt that through education and other intervention techniques, and we started asking those questions when I first got here, too.

We've been able to slowly turn it around and become much more than a "treat sickness and injury" receptacle of health care that really looks like the rest of the country, and we are doing other things. We're inspiring kids to take responsibility for their health, through a number of initiatives and programs. But a lot of it has to be really lived and learned as a form of art, so where I am today is really a function of this evolution over the last four, four and a half years, as we've built a team down here, and as we've had different commanders, and superintendents, and commandants of cadets come through and be enrolled in the possibility that the way to impact wellness is to impact leaders -- leaders -- that's a place that's designed to create leaders of character to serve a common defense, whether it's as Army officers or later on on Wall Street or in business. And if you can power them to take responsibility for their personal wellness not only individually but in groups of people and systems, then you've had an impact on health care in this country.

DR. OSTROFF: Let me just say, at Tab 4, for those of you, in the book.

LtCOL. SMITH: Next slide, please.

(Slide)

This is really designed to run no more than 10 to 15 minutes. I actually do welcome questions in the middle, if that's all right.

This is basically the outline of what I'm going to address. Some of these issues I've already presented to you and got you warmed up on when you came through Cadet Health Clinic. We have 4,000 cadets here. The books say, by law, 4100 max. I'm going to talk about our available health services here for them. I want to refresh everybody on what they already know, national collegiate health issues, which occur here as well, but there are some other ones, and then the domain of the "Spartan Environment", what is it about what goes on here at the Military Academy that has an impact on their health, and then some other domains that I work in -- I say "play in" appropriately -- the accession, the DODMERB accession issues affecting our new candidates, what goes on to them here that has an impact with them prior to commissioning, and then what those ultimate pre-commissioning issues are; what we've learned through all of this, these processes observations, that's helped us roll back into our practice ways and programs of improving cadet wellness and injury prevention. And then how that has actually had an impact on other systems at West Point that are not medical in nature -- the training systems within United States Corps of Cadets. They actually come to us and ask our opinion about templates for doing physical training and marching with the new cadets as they show

up in the summertime. We've actually been able to reduce the incidence of shin splints and stress fractures by over 50 percent the last three summers. And then some things that we are very concerned about for the future. Next slide, please.

(Slide)

Of our 4,000 cadets, we have several -- when I use the word "minority", I'm only talking about in terms of raw numbers, and that can be cut in many different ways. One of the smaller cohort groups here happens to be comprised of women.

We would say, over the four-year process, of the kids that start, each class attrits about 15 percent of the numbers that they start with. That's not a number that is solely medical in nature. A very small portion of that actually is medical. Most of those are kids who just have a change of heart, change of mind, or separated for disciplinary reasons.

I did throw one medical number in there that, for whatever reason, at the end of each year we end up with that very, very small percentage of cadets who essentially are not fit for commissioning, and they didn't show up that way. They broke, as we say, "on our watch". It could have been anything -- and I will discuss some of those topics that occur -- but these are kids that we've given our level best to hang on to and do the best we can to really get a handle on that alleged seizure disorder that we're not sure if it really is, or really get a handle on that third ACL reconstruction, things like that versus

things that happen in their senior year that we have no control over, like the onset of Type 1 diabetes. There's nothing that we can do for that. They can't go in the Army. Or things like ankylosing spondylitis. We do have occasionally issues like that that come up that are just out of our control in the cadets. Next slide, please.

(Slide)

You've all been to the primary gate of entry for health care at the United States Military Academy, Mologne Cadet Health Clinic. I think you all have a good overview of what we're doing down there, whether it be sick call, whether it be dealing with new illnesses, new injuries, the acuity that doesn't require hospital care or subspecialty care beyond our capability, and then our follow-up and health maintenance programs that go on down there.

Keller Army Community Hospital is just that, it's not a medical center. It's really a community-level hospital. We do have some subspecialty care up there -- general surgery, internal medicine. I have other family practitioners up there that I work with. All of the physicians and staff at Keller have an impact on cadet health. Because of the 12,000 prime beneficiaries that are impaneled at Keller Army Community Hospital, one-third of them are cadets. So, those physicians that are on-call and, of course, when cadets need health care that's outside the hours of Cadet Health Clinic, they will

present to the emergency room, for instance, at the hospital. So, we are able to use many of those physicians for referral care.

Anything beyond that, we use basically in two categories: (1) if it's life-threatening -- you know, threat of life, limb or eyesight -- and I need tertiary care support, I use a local medical center down in Westchester County. We have helivac capability at that center as well. If it's non-life-threatening but we do need medical center type subspecialty care, and given the need for some type of call to be made by a military specialist with regards to fitness for duty, I most frequently go to Walter Reed Army Medical Center for that, and those are by appointments only. We're able to transport the cadets down as outpatients, and we have a very wonderful relationship with Walter Reed.

Typically, on very rare occasions -- and this is a reminder to everybody who tells me that I've got the easiest population to work with because they never get sick -- frequently there are Centers of Excellence within the entire DOD medical network where very unusual care is delivered. All of you know what I'm talking about. If it's for a deep traumatic brain injury that requires extensive rehab, it's the Richmond VA, for instance. If it's for stem cell transplant for Hodgkin's Disease refractory to Level 1 treatment, it happens to be Wilford Hall in San Antonio. So, I'm able to go to places like that -- and I use

that last example because I have a cadet that fits that category right now. Now, he's not been discharged from the Military Academy because he's fixable. Right now, he's in remission. And as long as he's remission free for about two years, we may be able to commission him with a waiver. Next slide, please.

(Slide)

Biggest mistake I've made probably in this calendar year was this -- unfortunately, this slide is not updated. It leaves out probably the most significant issue that is very near and dear to our hearts right now here at West Point, which is supplement use -- supplement abuse. So, forgive me for leaving that out. Please pencil that in anywhere you feel it's necessary.

These are typically issues that are prominent, involving health and development at any age group, no matter where you are in the world. They seem to be issues prominent in America, in colleges, and they certainly are here as well.

As you know, in this age group, kids -- the most common scenario for kids who get sick or injured -- mainly injured -- is that it is really secondary to a bad decision, and it almost always involves the consumption of alcohol to some degree. That's just a fact of life, folks, you all know it. You're dealing with it every day. Next slide, please.

(Slide)

Given all those things that we see in this age

group all the time -- and this can also be translated to kids who are enlisting in all the services. These are typically the same problems that go on with them, so this is just not about -- this is not some elite set of issues and problems that's only associated with the Military Academy, it could be the University of Alabama or anywhere else in the country, but there are some unique things that go on here at West Point -- and since my old Company TAC days as a Tactical Officer at West Point, I choose to call it the "Spartan Environ". There's just that something culture that's generated when you cram all the stuff into what it is that they have to do in the short time that they have to do it.

And from that come several conclusions, or attitudes, or states of mind, in this population, in my patients. One of them that has a huge impact on their behavior is their perception that they "don't have a life", and that they don't have any choices, and that becomes significant when you see the opportunities that avail themselves to them. They will go out and it almost is a setup for behavior that seems to get them in more trouble, more often, more frequently. In other words, if not given an opportunity to drink for a while, typically the average cadet -- I didn't say everybody -- they feel a need to consume large quantities of alcohol in a short period of time -- you know, especially if it's on game day and they're watching Lee Corso get ready at the University of Michigan, where everybody's

been drunk for the last four days.

Now, something about the Spartan Environment over time -- and cadets, these young people who are pretty outstanding all around, they want to do well, they want to succeed, they get driven, they start pounding their heads to the grindstone, trying to do the right thing and, particularly early on as plebes or freshmen, and before you know it they are tired, they are worn out, they are anxious, they're depressed, they're sad, they're sick -- and, pretty much, those are all the same thing to me -- what they represent is just the rundown of that body. And so that's where not only do we take over, but we avail ourselves to the cadets.

So, as I told you all when you came out of the Clinic, we've just got a special eye for kids coming in, and what's bothering them. And I'm telling you -- I promise you -- that in 90 percent of the kids, it goes well beyond their upper respiratory infection, it goes well beyond their acute gastroenteritis, and the only way you're going to find out about that is to be committed to create that conversation beyond the initial encounter. And so that's when we're able to get into all the stuff that we've talked about.

Several people have asked me, "Well, what do you do about teaching and coaching?" Well, right now, as far as I've learned, the best mechanism for impacting these kids in terms of teaching and coaching them is in that initial encounter, it's

one-on-one. And you've got to have time to do that. And, fortunately, we have enough time, as practitioners, down at Cadet Health Clinic. But many of these kids, by the time they present to us early on in their career when they are young, they have already broken down in so many different areas, and you see this incredible myriad of constellations of symptoms and conditions. Probably the most popular one that I've seen -- I get four or five cadets a year that have -- all I can call it is a "Mono-like illness". I don't have a titer. They are rundown. They've seen every specialist at Walter Reed. And then, after a while, they just get better. Next slide, please.

(Slide)

Shifting to some things that may be a little bit more near and dear to you, we get about 13,000 kids that annually apply for the United States Military Academy. Now, I'm not involved in the admissions process per se, but those kids who are deemed qualified to proceed in that process -- just in terms of academic and leadership and whatever rating system we use here -- are then presented the opportunity to further their application, so then they have to go and do a DODMERB physical. And so wherever the DODMERB Center of Excellence is in their hometown -- it could be a military facility or it could be a local contracted practitioner -- those exams are generated.

Anything that comes into DODMERB that has a potential disqualifier is identified by DODMERB. You all know

how that works. We use a DOD Instruction for that. But all of those examiners out at DODMERB, they all know -- there's an Army guy or gal, there's an Air Force, Navy and whatnot -- they know each of us has our own little template, own little special set of rules that go with it. And the things that we see the most common are in these particular domains here. So, for kids who send a DODMERB physical in and DODMERB reads that physical and says, "Ah, there's a history here that's suggestive of reactive airway disease", so that temporarily disqualifies. They're not done, they just have to go through a remedial process where I, and the USMA surgeon Col. Algood (phonetic), our Hospital Commander, determine what additional information we want to see. And so we've developed some protocols to deal with that. And I explained to most of the group, I think, what we do with asthma, we like to see PFTs and MCCT, and if they are normal, then we tell the Superintendent, "Well, sir, this doesn't mean they don't have asthma, but this is the best guess we can make right now with the protocols that are available to us".

We have a lot of reconstructive joint surgeries. This is a very physically active group. And we have templates that our orthopedic surgeons have developed that are sent out, and what's nice about orthopedic injuries is that they're very quantitative in being able to measure and assess the recovery.

We have a lot of kids who have a lot of myopia, a lot of refractive error issues. I'm going to skip behavioral and

psych for a minute. We have some congenital issues that come up that we're able to waive sometimes, and then some miscellaneous things.

I'm going to make a statement right now. God bless DODMERB, I have a wonderful relationship and the process is extraordinary, and I mean it, but I would swap that "turn your head and cough" exam for a Becks inventory and an MMPI any day of the week.

The vast majority of cadets who break down here at the United States Military Academy during their time here, under a medical issue for which they are disqualified, do so under DSM-4. We have anywhere from 15 to 20 cadets break down within the first two years. It's an even mix between Access 1 and Access 2 -- new onset bipolar disease, schizophrenia -- but even more commonly, Access 2 issues -- narcissism, borderline personality disorder. These are kids that completely break down and decompensate in this culture.

We didn't do it to them. Unfortunately, most of that damage, as you know, developmentally is already there in place, and it's very difficult to assess and, of course, there's certain stigma associated in this culture where parents and families, whether it's done intentionally or in a state of denial, are not going to make those kinds of reports on DODMERB physicals. And so it's a very sad thing to see a kid locked up in their room wanting to kill themselves, and then have to go

home very shortly after that. Next slide, please.

(Slide)

So, a great question you'd all ask is, "So, Mark, you've got all these conditions that you've scrutinized, and you've got the best algorithms in place, and you've made good decisions about who ought to come and who not to come" -- and let me clarify that. Doctors don't make decisions about who gets to come here, Superintendent does, and I like it that way. He's the Commander, he's the President of the University, but he always gets real-time, best-guess data and predictions from me and the USMA surgeon. We'll look him right in the eye and say, "Sir, the MCCT and the PFTs are normal, but I guarantee you, I'll bet you $1,000, this kid's got asthma" -- you know, there's ways to get a normal MCCT -- "and you probably ought not waive him". We respect and honor his decisions after they're done, and we drive on. But what we've been able to see is that for most of the kids that we recommend not be waived -- correction -- that we have actually scrutinized deeply and feel comfortable about, we've not seen an exacerbation of any of those waived conditions. They really have not been that big a deal.

Occasionally, we'll see a reconstructed joint surgery that just didn't take, that is best, as it was assessed prior to coming here -- something about the road-marching all summer -- they just weren't able to get it done.

Most common thing that happens is that we either

break them while they're here -- and we do break a lot of cadets here -- or they have the onset of some unaccountable illness or disease that epidemiologically you would predict to have happen. For instance, bipolar disease is very common in this age group. This is the onset of age. You're going to get a Type 1 diabetic here and there. I've had a couple of ankylosing spondylitis -- I keep mentioning those, but those are the most common things that we really don't have any control over and predicting.

We have the most common injury that is not hospitalizable but that I treat and follow, that has had the greatest impact on readiness, is closed head injuries, and I'll mention a little bit that we've been able to develop some programs to help track that and fold back into the system prevention of worsening of head injuries as it evolves into post-concussive syndrome.

And, again, I mentioned the general behavioral and psych conditions as being a significant issue that comes to light. Aside from what I've mentioned already, the thing that begins to evolve and becomes a significant presence is maladaptive eating behavior. I think that's a more appropriate phrase for "eating disorder", and we see the full range of that. We have a very powerful, very active, very interventional eating disorder task force. One of my colleagues is the physician on that group, and we're treating at anytime four or five cadets for eating disorders. We're batting about 500. As you know, that's a very,

very, very difficult condition to overcome for long periods of time. It just doesn't have a very good recovery rate, but we think we're doing a good job with it. Next slide, please.

(Slide)

And so as we watch what happens to these cadets while they're hear, and see the types of things that happen to them -- I've mentioned closed head injuries, approximately 250 a year -- we're able to develop some protocols to start off with what little is in the literature. So, we kind of start with that, and then we kind of literally make it up as we go along, constantly re-evaluating the data we have.

Now, I work very closely with the Department of Physical Education and the certified athletic trainers, and what's fascinating about this and some of the other programs that we're talking about is that when none of this stuff exists in a culture like this, then the opportunity for it to be an issue worthy of investigation never comes up. So, it's a question that never got asked.

So, once you start talking about it, and people throughout the entire culture become aware of head injuries, whether -- it could be some sponsor of a cadet that lives back in the housing area realizes that his or her cadet that they're sponsoring has got headaches every day since that last boxing match -- could say to the cadet, "They take care of head injuries over at Cadet Health Clinic" -- that's kind of a nebulous

example, but my point is that the culture is now tied together. It's difficult for somebody to go out and get their head whacked and be in such a state that they are then predisposed to getting hit a week later in something else and really getting sick, really being in trouble now -- those almost never happen anymore because we have something like a closed head injury tracking program that everybody knows about. So, cadets have multiple ways to be inserted in that.

This is a culture that says if you get hit in the head and get hurt, don't say anything, right -- in boxing, in football, women's soccer. So, we feel we've had a real impact. And, clearly, we had 20 cadets a year that were hurt so bad it required referral to the Traumatic Brain Institute at Walter Reed. That's down to five a year -- not because we are hiding the other 15, but because the culture is preventing those other 15 or so cadets from getting hit a second time in close proximity to the first hit. So, we know we're having an impact.

Mono rehab is the same thing. When you get Mono in a place like this, it's bad. It can take a year for you to overcome it. So, rather than necessarily send him home on med-leave, we're able to let them get over the acute phase and then have them actually physiologically challenged to see what it takes to drive their heart rate up, and then enter them in a low-level exercise program that's enough to stimulate their immune system to actually get better.

I mentioned eating disorders. Sports Medicine Model for all our injuries is that our primary gatekeepers or portal of entry are our physical therapists. We happen to have wonderful ones here. And it's about whether you're being operated on, or you have an ankle sprain, or something like that, everything is about assessment and rehabilitation.

And we run a tobacco cessation program. And I address oral tobacco on the same plain as I do inhaled smoke. Wellness Committee is something that's being formed as we speak right now. It will involve a cadre of people like myself, the faculty and, most importantly, cadets. Next slide, please.

(Slide)

We think that the Administration has been so pleased with what we've done here that they've asked us to have impact on many of the training events that go on here at West Point, particularly cadet summer training. I personally, as the Brigade Surgeon -- that's the role I have, the name or the role that I possess here. I'm very present and visible during -- throughout the entire summer training, visiting sites, having impact on the medics that are there -- not just that, but on cadets and safety as well.

We do a lot of academic year training with a shift in kind of a military model. We've actually finally gotten cadets to quit running in boots with 75 pounds on their backs, down hills with concrete sidewalks. It has an amazing effect on

reducing the number of stress fractures.

And I've mentioned many different times, a very, very integrated working relationship with the other departments that see cadets in domains where they're either getting hurt or injured, or have an impact on helping prevent that. And probably the most important department is the Department of Physical Education.

Things we're looking at here in the future, sexual assault is a real significant issue here. We have a survey, a health assessment survey, that's going out, generated by the Military Academy. It has a large section on questions that involve sexual assault.

And I had this dream, this idea that you literally can write someone a prescription for wellness -- that's not about "don't do this, don't do that", but "here's the things that you ought to do, that you can do, that reinforce the things that you are doing", and it provides basically a coaching tool for them as they move on into the Army. Next slide, please.

(Slide)

And that's it. Anybody got any questions? Yes, sir?

DR. HERBOLD: On one of your slides, you indicate that you have immune suppression -- is that an objective observation or --

LtCOL. SMITH: No, sir. Thank you for pointing

that out. I treat these kids like they're grownups. I don't use medical jargon with them, but I introduce them to phrases that I want them to take on and struggle with. And when I talk to them about, "Listen, these are all the things you're doing, and if you're wondering why this is happening to you, then maybe you ought to investigate what's going on here". And, ultimately, a phrase that I've kind of coined and like to use is "global immune suppression". Within the cadet culture, I call it the "Global Immune Suppression Theory of Cadet Development", where they just run themselves down in so many different ways that they actually are slightly immune-suppressed, I believe. I mean, where else could you account for 18-year-olds where, out of say, the incidence of cellulitis that required admission to a hospital and IV antibiotics for four or five days is 10 out of 100? I saw more cases of cellulitis in the first two months I was here four years ago, than I did in my three-year residency -- you know, typically in that population where you see it most common, in elderly hypertensives with peripheral vascular disease or something like that.

So, you start to see these bizarre illnesses and you begin to develop your own internal understanding of what's going on here. And I keep coming back to they're just immune-suppressed. And it's not necessarily a cellular issue, it's the whole body and spirit. They are worn down mentally, emotionally, physically, and it results in a myriad of illnesses. And they

are also more predisposed to being physically injured as well.

DR. CLINE: You mentioned an attrition rate of 15 percent. I just wonder how stable that's been over time. Are there any trends, say, going back a few decades?

LtCOL. SMITH: Right. That's going to be over the last ten years. And this is -- you just got lucky, having me up here today, that I could speak to that. Fourteen years ago, I came here to become a Tactical Officer and command a company. That happened to be during the time frame of a Superintendent that said, "We're done with all the crap. The games are over. The frankly overtly abusive behavior is now going to be outlawed. No more hazing. It's for real now, it's the law". And the Tactical Officers were brought in as change agents. We through a very, very special Masters Program here at West Point. So, up until that year, in '88, we used to bring in 1500 new cadets, and we lost 300 that summer. Well, that's way over 15 percent right there.

And it was just that's the way they'd been doing it for 100 years. So, I would say over the last ten years, when they bring in 1196 cadets like they did this year, they're committed to keeping all 1196 of them. Now, we attrited about 60 of them during the summer, and those numbers are stable. So, really, you do your percentages, you've got about another 100-or-so, 150, 120 out of this class that are going to disappear over the next four years, and it's for a host of reasons.

The next big gate cut is at the end of their second year when, prior to entering their third year and starting class, they don't have a commitment to the Government yet. And so after two years, they can go here for free and resign and transfer to another college. You get a big transfer at that point, as well.

DR. HERBOLD: How big?

LtCOL. SMITH: I'm sorry?

DR. HERBOLD: How big? How many?

LtCOL. SMITH: How many what, sir?

DR. HERBOLD: How many transfer at the end of two years of college?

LtCOL. SMITH: I don't know the exact numbers. It's going to be around the 50 range. I'm ballparking it. Yes, sir.

COL. STAUNTON: How much time would you allow for an appointment?

LtCOL. SMITH: We have 30-minute appointments.

COL. STAUNTON: That's great.

LtCOL. SMITH: Yeah, we do. Sometimes it requires a full 30 minutes to deal with whatever the medical issue is, but I think the real thing is just having the self-awareness to not just be hung on -- in other words, as practitioners, we're lit up. I've been doing this for almost five years, I'm not bored, okay, because I know that there's something else going on in this

interaction. And it really then becomes time is a limiting factor, and so we really, really work hard to create an opportunity to be able to move beyond just that medical reason and develop that rapport.

COL. STAUNTON: And do you see the future -- and you've been mentioning the future, talking about the future -- how do you think that will impact on medical practice in the Army in terms of -- I'm not sure what you call it, your guidebook of the practice of the regimental medical officer looking after a battalion or group of soldiers.

LtCOL. SMITH: Exactly. I think that does go on a lot out in the Army. The one thing I can't speak to experientially is that I'm sorry to say I have not served as a physician in a troop unit, but I have commanded troop units where I had physicians who worked for me. So, I certainly know what to expect from them.

No, I think that this is a model that is working in varying degrees throughout the Army. There's been a very strong emphasis on having physicians down to the brigade level, and all of our troop units, as you know, down at the battalion level -- we only have regiments in a couple of places, the Cavalry -- we have Physicians Assistants, but I am meeting a lot of people who give me feedback that our PAs down at the battalion levels, many of them are extraordinary practitioners.

There's a family medicine model that's going on at

some of these troop medical clinics, which we used to call them TMCs in the early days -- they still are -- but they're not just taking care of the soldiers in the 1st Brigade, 1st Cav Division, or the Division Artillery, they are taking care of the families, and that's been something -- as a family practitioner, it's obviously something that I'm glad to see.

I think what we're doing -- I think what we're creating -- and this is a work-in-progress -- is really a model for -- I'd like to see it be a model for everything. You have to understand, I came to medicine as a grown adult. I didn't go to Med School until I was 34. So, I was unbrainwashable. I already had feelings about medicine and health care in this country, and God bless everyone on this planet, but in this country my take is that you only need two things to enter the health care system -- you need to be sick and stupid. And I'm not degrading human beings when I say that, that's what we've given them. That's the space we've created for people. There's no space for wellness. Nobody gets paid for that. And, certainly, it's very difficult to get access to the health care industry when you're well and you just want some coaching, when you've got a line of people standing out there that are broke and have no idea why they're broken.

DR. OSTROFF: I think that we have time for one more question. Dr. LeMasters has been waiting very patiently.

DR. LeMASTERS: Thank you. I have really a two-

part question. Under Prescription for Health, I think that's a great concept and was wondering if, as part of that, you provide or are thinking of providing vitamin supplements to the cadets, to help this immune system, which I think is probably a very real thing. And the other thing is the alcoholism program and if you have that, and this would be certainly a great population to have a surveillance database system computerized, and I wonder if you have that in place.

LtCOL. SMITH: Well, first of all, we do offer vitamins. I push them, and I do so for several reasons. One, it's multi-factorial. One, never forget, vitamins do no harm, they really don't, certainly not the ones I give. It's a gram of C, 400 IUs of Vitamin E and a multi-vitamin. But maybe it creates a state of mind where they're thinking about what they're doing. And they know -- I've preached to them -- there goes the word "preach" -- I have shared with them that over the last 20 or 30 years, that the food in this culture, the quality of food in this culture is decompensated dramatically. We have farm acreage that is way over-farmed. We may be putting out 20 times more bushels per acre of some plant, but I guarantee you it's got about 1/20th of the nutrients in it. Meat products that are jam-packed full of antibiotics and steroids, those things have an impact on people's immune systems, too.

So, it's part of a big picture, so they kind of get -- this is what's possible, so we throw that out there.

Prescription of Health, it's kind of a concept right now, but by the time they leave here, they basically have one. Whether or not it's something we want to write down in a handbook or something like that, we're just kind of evolving toward that point right now, ma'am.

COL. CRAIG: I'll add to that a little bit, that I think we have more than just an idea -- Mark talked about the prescription, and you'll see that when Dr. Pim talks to you a little bit this morning, not only for the cadets themselves, their personal health, but also how to take that on and use that once they get in the military when they're platoon leaders, company commanders, understanding how to take care of other junior folks in a very good way. So, we're moving more and more toward that.

DR. OSTROFF: That will be a nice opportunity to segue into your presentation, or else we'll all miss our nutrition for the lunch hour. Col. Smith, thank you so much.

LtCOL. SMITH: Thank you all.

(Applause.)

COL. CRAIG: I'm Col. Craig, Steve Craig. For those of you who don't know me, I'm the Chief of Preventive Medicine here at Keller Army Community Hospital. I've been here since the 1st of June, so don't ask me any hard questions. And, actually, if you would hold your questions, when I'm done I'm going to have Dr. Pim come up and give his presentation, and then

you can give us questions at the end.

What I'd like to talk to you about for the next few minutes is the morbidity and mortality during cadetship, and this will cover Fiscal Year 2002. Next slide, please.

(Slide)

A little demographics: 84 percent male. Next slide, please.

(Slide)

Seventy-five percent Caucasian, African American, Hispanic, Asian making up about the same size slices of the pie -- 1 percent American Indian. Next slide, please.

(Slide)

And demographics. And the way I chopped this up -- I know you are all very well aware of how old college students are, but when I looked at it, I thought there's an 11-year period here, and how can I best describe that, and I think by looking at the 17-year-olds, they are 1 percent of our population who have not reached their majority yet, can become an issue. 18-to-20-year-olds make up 64 percent. They have reached their majority, but they are not of drinking age, and then 21-to-27-year-olds make up the remaining 35 percent. And those things are just -- just think of those in terms of some of the issues we talk about with drinking, sexual issues, and that sort of thing. Next slide, please.

(Slide)

And one last slide on prior service, 11 percent of the Corps has been either in the Reserves, Active Duty, or Guard. Next slide, please.

(Slide)

I present to you here some of the leading outpatient diagnoses in this past fiscal year -- this comes from ADS data at the hospital, and I've put the rate as per-thousand cadets, as you can see there. Not real surprising, I don't think, for this age group. Of course, upper respiratory infections are going to make up a large part of this -- again mostly, as I say, outpatient here, but you see a large number of ankle sprains and strains, joint problems, the occasional gastroenteritis but, again, pretty much these are all injuries of the young, healthy, very active population who are virtually all are engaged in some sports.

I know when I was a cadet -- not here, but at the Virginia Military Institute -- when you had intramural football, that was flag football. And I was told by one of the new cadets the other day that intramural football here, he was rather surprised when they directed him into the locker room to get his equipment, so it's full contact football, which is going to bring on, I think, more injuries than the way we used to do it. Next slide, please.

(Slide)

Leading inpatient diagnoses, again, the

arthroscopies, knee procedures that you would expect with some of the other injuries we've seen. Again, viral illness, URIs, that sort of thing, the gastroenteritis, do not cause very many hospitalizations, again, as you would expect. Next slide, please.

(Slide)

And reportable diseases of interest -- this is in the past Fiscal Year 2002, it is per year.

Heat injury, I don't think we've done too badly with this year. Eight of those injuries were on the road march back from Camp Frederick, which is -- Mike Bayles, how many miles?

LtCOL. BAYLES: Twelve.

COL. CRAIG: -- 12-mile road march, which was on a hot day. So, out of some 1100 individuals that made that march, we only had 8 heat injuries. And, again, the Lyme Disease and West Nile have been getting our attention quite a bit. West Nile, we have had no cases this year. Orange County, New York actually has never had a human case of West Nile Virus. Next slide, please.

(Slide)

And substance abuse. Those refer to the alcohol and drug abuse prevention and training. This is education and training only. And then if they get enrolled in the Army Substance Abuse Program, that is for treatment. Next slide,

please.

(Slide)

And cadet mortality. Again, I had to go back to 1999 to give you even these three cases, but the thrill-seeking fall from Bear Mountain Bridge turned out tragically. Another young man was hit by a train in Garrison. I don't know that -- I only suspect that both of those first two had some alcohol involvement, I do not know that as a fact. And in February of this year, we had a viral meningitis case that died.

That's all I have. I would, in presenting Dr. Ralph Pim, of the Physical Education Department, I'd like to say we've talked to you about the things that you have asked us to present to you -- the accession issues, the issue of the pre-commissioning, the morbidity and mortality experience here in what I presume is a normal year.

I think I'd like to add one other thing to it, if you'll give us the time, and that is to show what we have been doing here at West Point to try to assist the cadets in taking on good health habits, I guess is the best way to put it, and helping them progress through this and understanding health issues, and I think Dr. Pim's program on wellness is very good, and he'll talk to you about that for the next few minutes. Ralph.

DR. OSTROFF: Thank you. Dr. Pim?

DR. PIM: Thank you. It's a real pleasure to be

here today and have an opportunity to talk a little bit about our Wellness Course. It is a required course for all second year cadets. We reach over 1,000 cadets each academic year, and the course is taught in 18 one-hour lessons. Next slide, please.

(Slide)

Wellness is housed in the Department of Physical Education. Our mission is, of course, to develop leaders of character who are physically and mentally prepared for a career in the Army and a lifetime of fitness and well being.

We have identified four primary objectives. First of all, to introduce the dimensions of wellness; secondly, to promote self-responsibility; third, to empower cadets with the knowledge and the tools so that they themselves can make behavioral changes; and the fourth objective is to prepare cadets for their career as Army Leaders. Next slide, please.

(Slide)

Let's look at the first objective, and that is looking at the dimensions of wellness. In our course, we focus in five areas -- the physical, the emotional, the spiritual, social, and the mental. We definitely emphasize the holistic approach. We're trying to get our cadets to understand the importance of the balancing of all these dimensions and maintaining each of the dimensions in order that they can live life to the fullest.

In fact, our very first class, what we end up

doing is we have our cadets construct a wellness wheel, and we ask them to do an assessment or an evaluation in each of these dimensions. We have them on a scale of 1-to-6, and then they end up actually making the spokes of a wheel, and then we ask them, "Okay, does your wheel roll, or is it very, very unbalanced, and why?" So, on the very first day we get them to start looking at the holistic concept of wellness.

A quick snapshot of many of the different topics, you can look at the physical, and we cover the health-related fitness components. The Wellness Course is the first course of three that our cadets end up taking. In their third year, they'll take a course called Personal Fitness, and in their final year they take a Unit Fitness Course. We also look at nutrition, very, very important, the weight management.

Then the emotional area, one of the key areas that we spend time on is the idea of stress management, coping techniques, identifying stressors, and trying to help cadets get through this process and understand the difference between new stress and distress. We also get into the idea of communication and conflict resolution.

In the spiritual dimension, very important dimension that we spend time with looking at getting cadets to really search for purpose, meaning in life, and also understanding the values, the ethics, and the morals that are the fiber of who they are and what they are becoming here as leaders

of character.

The social, we begin with the idea of self-image, the importance of the self-image. We take it into healthy relationships, then we also get into the team-building idea that they certainly do as leaders.

And then the last dimension is the mental, and what we are really seeking right there is self-responsibility, which is really the core of wellness. Next slide, please.

(Slide)

We have also targeted specific health-related issues, and Col. Smith mentioned some of these. The ones that you can see that are coming up are ones that we really highlight and then we spend time on because they are ones that the cadets have a strong interest in. They want the facts, they want information. For example, let me piggyback on what Col. Smith said -- nutritional supplements. What a hot topic right now, unbelievable, and we really key on three that the cadets have questions on. One is Ephedra, the second one is creatinine, and then third one is anabolic steroids. Those three we really highlight. We certainly go into other ones, and try to get them aware, but that's just an example of what we're trying to do as we highlight certain of the health-related issues.

Making the connection because that's what it's all about, as educators, making that connection with cadets so that this information that is so crucial to their careers and their

happiness as individuals, that they take an active part in it.

The first thing that we try to do is we personalize through assessments, and we end up using different types of assessments. You'll see that we'll take the different dimensions. The cadets will actually do a self-assessment. They'll rate themselves in different areas. Then many times we'll ask them to do a reflective statement. Then the next step is maybe a plan that they will develop to strengthen themselves in certain areas.

You will also see on this same slide that we do a nutrition project that we use the USDA Website -- outstanding Website -- and the project is one of the highlights of the class. The cadets will take seven days, they'll input all their food intake. Through that Website, they will get a list of their nutrient intakes, they'll be able to see any deficiencies, they'll look at their strengths. At the same time, as you can see on the slide, they will have their own personal food guide pyramid.

They'll analyze those results and then, by identifying the weak areas, they will come up with specific goals, and they will do the exercise again for another seven days. So, what we're trying to do is really open their eyes to the things that they are eating and the importance in making that connection to peak performance.Next slide, please.

(Slide)

We also do clinical assessments in our class, and you can see that we had them take their blood pressure in class. We really appreciate the work that Col. Smith has done with us as far as the lipid profile, and also they do a waist-to-hip ratio. Next slide, please.

(Slide)

The next thing is we want to make this course enjoyable. I want my cadets to look forward to coming to class. I want it to be where they are participants in the class, not spectators, so we try to make it fun. Next slide, please.

(Slide)

One way that we do this is, in one of our classes we may play Jeopardy, the game show Jeopardy. In this particular Jeopardy, we are in our STDs lesson, so you can look at the categories at the very top. Next slide, please.

(Slide)

We'll play a little bit -- this virus weakens the immune system -- and then another clip would end up bringing what the answer is. It's just a way to get some of our lesson objectives across, key terms, at the same time we divide the cadets into teams and have a panel of judges, and we try to make this as interesting as possible for them. Next slide, please.

(Slide)

The idea of getting cadets involved. We do this in many ways. I mentioned reflective statements. We also do

problem-solving, and we'll do the problem-solving from different aspects. We will talk about problem-solving as if there are team leaders right now. Our second year cadets are in charge of a first-year cadet, so there's a lot of different problems that may come up. So, we may approach it that way. We may also approach it in the future, as far as 2nd Lieutenants. So, we're trying to get them involved. Next slide, please.

(Slide)

This is an example of one that we did as far as just with their social development because I certainly agree that the cadets many times feel like that is an area -- that's one dimension that they feel they may be struggling in here at the Academy because they do not get a lot of leave. And so right here, we may ask them what impact, and we have them reflect as far as both pros and cons, but at the same time we're trying to channel this into a learning experience for them, and on that particular lesson, for example, I will bring in the Director of Social Development and she will listen to their pros and cons, and then also try to get them to understand maybe some of the things that they could not quite see as far as the total mission here at the Academy. Next slide, please.

(Slide)

Ask the experts. We are surrounded here at West Point by subject matter experts, and we will bring in guest speakers like I just mentioned -- the Director of Social

Development -- and it's twofold. No. 1, it's to provide the cadets with the most accurate and up-to-date information but, secondly, it gives cadets an opportunity to meet these individuals so that if there are problems in the future, or if they know of a friend that has a problem, they feel a lot more comfortable contacting that individual. Next slide, please.

(Slide)

Here are just some examples of the different guest speakers that we've had. I mentioned Ms. Carol Weart, the Director of Social Development. We also have had the Cadet Dietitian that will come in, and her message to the cadets -- she talks about making healthy choices both when they order out, or when they are on leave they go to a fast-food restaurant, how can they make healthy choices. But even more important is the idea within the framework of the Mess Hall, making health choices.

On the STD lesson, we're looking forward -- Col. Bayles will be coming in in the next couple weeks, he's come in in the past -- and he really does a good job of just relating to cadets, making it very comfortable for them to ask questions and be informed, and takes it way beyond just the actual textbook knowledge. Next slide, please.

(Slide)

The next is the idea of experience the moment, and I mentioned the idea of the importance of hands-on. Next slide, please.

(Slide)

This is one question that's very, very important. I mean, does alcohol impair your judgment? Next slide, please.

(Slide)

We mixed one cadet and one special pair of glasses -- and it just so happens I brought some of these glasses, and these are called "drunk and dangerous glasses". So, we end up the cadets will have a remote control car. We actually make a course, and the course -- you can't quite see it in the slide -- but it's made out of wine glasses, and they have to maneuver the car through the barriers. We have them do it before the glasses, and then we have them put the "drunk and dangerous glasses" on and they will very often end up with the idea of "fatal vision", they idea they start realizing first-hand the effects that the alcohol is having on everything -- their perception, their reflexes.

The bottom line, does the class make a difference, and I would like you to read one cadet's story. Next slide, please.

(Slide)

We received this e-mail last spring, and to me that's what this course is all about. It's touching individuals. It's making a difference in cadet's lives. It's listening. It's finding out what their concerns are, and then helping them find the answers. Next slide, please.

(Slide)

In summary, the Introduction to Wellness Course, No. 1, it focuses on the Army mission; No. 2, we're trying to empower cadets to take responsibility for their personal wellness lifestyles; and the third point -- and I think it's very important -- is this course is an evolving course. This is only the third year that we've had this particular course as a stand-alone course. So, what we're doing is definitely looking, searching for the issues, listening to the cadets, looking at their reflective statements and their assessments of the course, and what we're doing is each year trying to do a better job of meeting their needs.

In closing, I'd like to introduce a member of our Wellness Team, Ms. Jeanne Hunkapiller, and she's in the back -- if you would stand, please, Jeanne -- she certainly has helped us tremendously as far as building this course, and I also want to let you know that she has the "drunk and dangerous glasses" and the remote car back there, so if any of you, before you go to lunch, would like to try it, make sure you see Jeanne.

Thank you very much, I certainly appreciate the time.

(Applause.)

DR. OSTROFF: Thanks very much. I think we have a couple of minutes for questions for either Dr. Pim or Col. Craig.

DR. BERG: Bill Berg, Hampton Health Department.

What is the Academy's policy on smoking? You've mentioned smoking cessation and substance abuse, and I'm thinking in the context of the enlisted Recruit Centers where smoking and tobacco use is not allowed at all.

LtCOL. SMITH: There is no prohibition for smoking here for cadets.

DR. BERG: Why not?

LtCOL. SMITH: Well, sir, that's a great question. I'm not the Superintendent. If I was, I'd outlaw it. I would, honest Injun.

LtCOL. BAYLES: They are not allowed to use tobacco during their initial cadet basic training, though. At least there, during that time frame there, they are off for, what is it, six weeks or something.

LtCOL. SMITH: It's going to be about a six to eight week period.

LtCOL. BAYLES: But after that -- and it's interesting because some of the people that I talk to in the Tobacco Cessation Program, they were off for a while during their basic training. They try to stay off, but then things get stressful, they get back on.

Another portion of the people that come to the cadet Tobacco Cessation Program pick up tobacco use since arriving at West Point. They start dipping to try to stay awake. And I've even had girls that have, in addition to smoking, when

they were in their rooms and they couldn't smoke, they dipped.

DR. PIM: We just got smoking out of the barracks a year and a half ago.

LtCOL. BAYLES: So now they dip in the barracks.

DR. OSTROFF: Ben.

COL. DINIEGA: Steve, what is the policy on meningococcal vaccine use, and was that a Sero Group B that the fatality occurred?

LtCOL. SMITH: No, that was viral.

COL. DINIEGA: Oh, viral -- I missed that. But the use of the vaccine, is that required for --

LtCOL. SMITH: Yes.

DR. OSTROFF: Dr. Poland, and then Dr. Fensom.

DR. POLAND: I wonder -- I was a little surprised when we were out walking around, do you know what the distribution of body mass index is among the cadets?

LtCOL. SMITH: No, I don't.

LtCOL. FENSOM: I'd like to ask what the policy of the Academy is with regard to cadet pregnancy, and what the numbers are, how much of an issue is it, and the other side of that is birth control.

LtCOL. SMITH: The policy right now is that if a woman becomes pregnant, the official policy of the Academy is if a woman becomes pregnant, she has several options. We actually anecdotally believe that most of the time that it happens, we

never know about it, and they lead to termination, on their own time, without telling anybody. But for those young women who come in and there are different portals of entry, myself, Cadet Health, one of the physicians, the Chaplains, sometimes they tell their Tactical Officer, that's very rare, and it's no fault of the TAC or the Commander of the Cadet Company, but at that point they have really two options. Either they stay, they choose to stay as cadets, and that typically is a choice that is associated with termination. My job as a doctor at that point is to provide them with a list of certified facilities. They make a wide berth of appointments, and talk to the Chaplain, the Tactical Officer, the chain of command. The Academy doesn't really impose any particular opinion on that, but just to make sure the cadet has every piece of information she needs.

But what is becoming more common is that the woman is choosing to keep her child, and then we carve out or craft a time frame that they can stay here. We try to keep them as long as we can. It's usually up to about 20 or 24 weeks, on a regular profile like any soldier, and they leave coincident with the term -- like the end of a semester or at the end of the summer or something like that -- and they go on a medical leave of absence, and they have their baby, and they are allowed to return. But they must give up -- the law requires that they give up legal custody of their child. No cadet in any institution or any Academy can be married or have children legally.

Birth control, prominent. Very actively advertised, and we have a lot of customers, men and women. And we have women who take condoms from Cadet Health Clinic, not just men.

DR. PATRICK: Kevin Patrick, San Diego. Let me ask about a couple of other medications that are increasingly commonly used in these populations -- meds for learning disorders and the antidepressants. We're seeing incredible numbers of kids coming in already with those. Are you seeing anybody coming here on either of those categories of medications?

LtCOL. SMITH: Right now, our regulation or our interpretation of our Reg and our ultimate recommendation to the Superintendent is that you can't be here on learning enhancing drugs. That's what we call it. That's what the Academy calls it -- Ritalin, things like that. I know cadets have ADD, ADHD, but they're not on medication. Some of them make it, some of them don't. But you can't be here on that medication. In fact, you have to be off of it for a year. The other one, sir?

DR. PATRICK: Antidepressant, either coming or newly diagnosed, because they are so effective and they work so well with some.

LtCOL. SMITH: They do. And one of the Generals asked me last year, "We have cadets on Prozac?" And I went, "Yes, sir". And you get a lot of dysthymia in this population, it's perfectly normal. And when I use the "D" word, I go, "It's

not all for medications in a psychiatric facility". Depression is very common. Depression is part of growth and development, I think. And so we're very open about being able to treat that. Remember, I mentioned we have mental health, we have a psychiatrist, we also have a Counseling Center with psychologists, and whoever the right manager is for that short-term treatment, we find the right match for the cadet.

DR. PATRICK: Another question. These rates of injury really strike me as being very high. I hope these aren't all individual cases -- I mean, presumably these are re-dislocations of the shoulder and things like that on somebody who has had a problem with that. What's being done? I guess I ask this question of Dr. Craig, what's being done in the area of injury surveillance and, ultimately, interventions to prevent some of these?

DR. CRAIG: The data was unscrubbed ADS data, so I presume that some of those, or a number of those, are visits for the same problem, but that's unscrubbed data. I was not able to do that.

And as far as the surveillance, we do -- Mark, I'm going to have to turn that to you because I'm not aware of any specific injury surveillance that we are doing. I know we're not doing any in Preventive Medicine right now, and I don't know if Orthopedics or your shop is doing it.

LtCOL. SMITH: That's a great question. Someone

asked me earlier in Cadet Health Clinic today, and made me think about -- you know, I don't really have a good, solid answer for that, but I do know that there is kind of, like Dr. Pim mentioned -- you've seen different components from the community. There's this kind of holistic net around the cadets that are constantly reinforcing and banging home messages about safety and prevention. We have coaches that take care of these teams, and these physicians, particularly the orthopedic surgeons who do most of this injury work, work very closely with the athletic teams where most of these injuries are occurring, the coaches on injury prevention and things like that. But I'm not sure -- perhaps the Director of our Soft Tissue Fellowship may be keeping better stats than we are, but it's a good thought.

DR. OSTROFF: Let me just ask one or two more questions. I was curious that the leading reportable disease of interest was influenza. I assume that they get the flu shot? Are these documented cases? I mean, do you look for virus?

COL. CRAIG: As I understood you, yes, sir.

LtCOL. SMITH: Sir, that may be another ADS scrub misnomer. It's no one's fault here. We only have a couple of cases of true influenza each year. Everybody gets a flu shot. We almost see no true influenza. One of our diagnoses is "flu-like illness", and so that's not true influenza. Great question.

DR. OSTROFF: Thank you. And then my other question is regarding this issue of the nutritional supplements.

Is there some policy regarding this and, if so, how is it enforced?

LtCOL. SMITH: That's perfect timing. Two and a half years ago, the first Command Policy Statement came from the Commandant of Cadets, and it involved that famous subject called gamma-hydroxybutyric acid, GHB, which we found cadets were abusing here quite often. And that really opened the door again for all of us around the cadets to start asking what's going on, what are they using, and that's where we came out with Ephedra. Right now, Ephedra is now a banned substance at the United States Military Academy, and all Ephedra-based products, which are legal, are illegal to purchase by cadets of the United States Military Academy.

COL. CRAIG: They were also taken out of ACIP, I don't know if everybody is aware of that. On 1 September, all those came off the shelves, or were supposed to.

I'd like to make one other comment, too, Mark, and not to cross swords with you, but according to the ADS, that is influenza. Now, I know that sounds ridiculous, but that is, according to ADS, so maybe we've got a problem there.

LtCOL. SMITH: It's the way we're reporting it then.

DR. OSTROFF: One more question and then we'll have to close.

DR. CAMPBELL: Doug Campbell. You mentioned you

brought down the rate of shin splints, et cetera, through -- I don't know what you did -- but how do you approach the "Powers" that be to get these changes made to get things done you feel are important?

LtCOL. SMITH: Well, it's like anything when you have a complex organization, it obviously appears to have some bureaucratic limitations. You just get out there and you start the conversation. And when you've got a doctor and a doctor who teaches physical development and people who are willing to sit down and have a conversation, it's kind of hard to ignore at that point.

Sometimes it's hard -- people think it's hard to tell Generals what's so. Try it, it works. Most of them will listen. And so when you open that conversation at the senior leadership level, regardless of their motivation, you've really got to move to the action phase, and that's what's been going on. We've been providing good data, and we've been giving good feedback and good coaching to the, in this case, chain of command. And so each year it just has become a nature or habit of the beast in this culture to bring the key players together to "let's talk about what happened last year, lessons learned, and see if we can improve what's going on next year".

Somebody finally said it doesn't make sense for a brand new 18-year-old to come out and do physical training for an hour in the morning, including a four-mile run, and then come

back and do a four-mile road march the next day, and then come back and do PT for the next two days. Something bad is going to happen. And the assumption was in previous generations, well, they're athletes anyway, and if they break down then they're just not tough enough. Well, that type of mentality is gone, it's archaic. It doesn't make sense to break soldiers down. If you're doing something that breaks them down, then it's a leadership problem now, and you need to do something about that because you can't take soldiers to combat and break them, and expect them to be effective. In this case, we're talking about empowering leaders to learn that lesson at age 18.

DR. OSTROFF: I just have one more question, and it's not related to cadet health, but I was curious, with 2 million visitors a year -- and we saw some of them as we were touring around. Many of these are senior citizens. How often do you have medical issues arise with your 2 million visitors, and what do you do about it?

LtCOL. SMITH: Well, one of the ways that they arrive, sir, is through the football stadium, and I am accountable for health care during those events. It's very interesting. Anybody -- this is a medical facility that does not refuse health care to anybody. So, if somebody who completely has nothing to do with military medicine or authorization to be seen here, if they get sick or have a heart attack or whatever, we respond to everybody who is on this installation. Sometimes

we're first-call for ER care in the local community for emergencies.

DR. OSTROFF: Thanks. I think we have some plaques for you, and certificates. We definitely appreciate your willingness to host us and for taking the time out of your very busy schedules to talk about the programs here and what you're doing to keep the cadets healthy.

LtCOL. RIDDLE: For Col. Craig, to the staff and the Department of Preventive Medicine and Wellness, in appreciation for hosting the Autumn 2002 meeting of the Armed Forces Epidemiological Board, please accept this plaque on behalf of the Board.

DR. OSTROFF: And I haven't seen a plaque this nice before, so I think you're the first recipients.

(Applause.)

LtCOL. RIDDLE: Dr. Winkenwerder, the Assistant Secretary of Defense for Health Affairs, could not be here today, he's actually in South Africa on a military medicine meeting that he has to host next year in D.C. So, he's learning the logistics and the requirements there, but he asked that we present each of you with a certificate for your outstanding support providing for the myriad of requirements that allows for an exceptionally successful and productive meeting of the Armed Forces Epidemiological Board here at the U.S. Military Academy at West Point, and certainly appreciate it.

(Applause.)

LtCOL. RIDDLE: One note, if you haven't signed up for dinner, please sign up for the dinner tonight before you leave. And if we can be back in here at a quarter of, so give us an hour.

(Whereupon, at 12:45 p.m., the luncheon recess was taken.)

AFTERNOON SESSION

(1:45 p.m.)

(In progress.)

COL. DINIEGA: (Continuing.)

(Slide)

West Nile. Dr. Ostroff is the National POC for West Nile Virus Surveillance Program. The DOD policy which we've had for the last three years, this year's policy was signed in July. As with the national program, the surveillance components

are listed. The DOD installations have an option to send their specimens in to a central lab or to use local or State health resources.

All birds are done at the U.S. Geological Survey. Government horses -- we do have quite a few for mascots and ceremonial purposes, et cetera. My understanding is all Government-owned horses on DOD installations have been vaccinated.

We've had no -- go to the next slide.

(Slide)

Just a comparison of last year's results, which was a mild year compared to this year, and this year's results. They are listed on top in this slide. There's been no positive horses to date, or positive human cases. Next slide, please.

(Slide)

DOD Influenza Vaccine Policy, we come out with a policy every year. DOD had gotten involved two years ago because of the vaccine shortage and distribution slowdown. This year it's a little bit better.

Health Affairs participates in the flue strain selection through the VRBPAC at FDA, and we also participate in developing ACIP recommendations. The vaccine for next year, there's be a change in the B-strain, and that's listed on the bottom of the slide. Next slide, please.

(Slide)

And the new thing for this year that we have to pay attention to in DOD is the ACIP encouragement recommendation, and they encourage vaccination of infants 6 to 23 months, and they hope to develop a full recommendation in one to three years, and the issues around development of a full recommendation is the cost of the vaccine, the payment for the vaccine, and also the vaccine supply and to be able to get the requirements into the producers early enough so that we can cover that group.

And the other encouragement was to vaccinate household contacts and out-of-home caregivers of infants 0 to 23 months. The vaccine cannot be used in infants less than six months.

Our policy is pretty close to last year's policy except for the encouragement recommendation inclusion, and our policy will be signed out probably next week or the week after.

We have a very small share of the national requirements for vaccine. You can see it on the slide, 3 million doses a year. Sometimes we have one contractor, sometimes two. This year we have 75 percent of our supply from Aventis-Pasteur and 25 percent Wyeth. The national requirement this year is running about 95 million.

Our prioritization was developed from the Joint Preventive Medicine Policy Group, of which the members are the DOD Liaisons to the AFEB, and the biggest difference from the national policy is that our Active Duty personnel have to be

vaccinated on an annual basis against influenza. So, our prioritization goes to the forward deployed or deployable forces, the medical high-risk, 65-year-olds, and healthcare workers. That's our top priority. Next slide, please.

(Slide)

Anthrax, you know, we were in a lull for a while because of the vaccine supplies and the manufacturing issues with the producer. It finally all got fixed, and in July the resumption policy was announced. It's a limited vaccination policy for higher threat areas, boots-on-ground people deployed forward in those areas.

There is an agreement with HHS to save half of the production for civilian use and stockpiling use. You'll hear a little bit more from Dr. Bradshaw when he gives John Grabenstein's talk tomorrow. Next slide, please.

(Slide)

The SARTF, Select Agents Response Task Force. Back in June, Dr. Winkenwerder chartered a task force to assist our office in several tasks. One is to finalize a DOD response plan; secondly, to take a look at the DOD Pandemic response plan and develop that plan for DOD. You can see the members and the chair. Next slide, please.

(Slide)

The DOD Smallpox Response Plan was developed prior to the Task Force getting together, through an informal DOD

working group, and we took the CDC Response Plan, the interim response plan, and made it applicable to DOD personnel at installations and organizations. The DOD Smallpox Response Plan has been sent to the Deputy Secretary of Defense for approval. In the meantime, the Surgeons General were directed to use the draft that was being coordinated and reviewed as interim planning guidance in case any incidents were to occur. The final publication of the DOD Response Plan is expected this month, and it's already been taken up to the Deputy Secretary of Defense level and Secretary of Defense level.

The DOD Pandemic Influenza Response Plan, which has been kicking around for years, the Select Agents Response Task Force is drafting the DOD plan. It will be based on the DHHS/CDC national plan, and I hope to coordinate that with the Services and the Joint Staff at the end of this month. CDC has had at least one meeting now on production and distribution issues that might arise in response to a Pandemic flu. Next slide, please.

(Slide)

The smallpox policy. This is being worked by an Action Officer Working Group at the DOD level. Officers are listed on the slide. There is a DOD Senior Review Group made up of people from the offices involved, and Dr. Ostroff as the President of the AFEB.

We need a separate DOD policy primarily because of

our military mission, our forward stationed and deployed forces and potential contingencies.

The options being considered range from forward deployed personnel only to Total Force option, and all the advantages and disadvantages are being discussed for the range of option policies that could be looked at.

The AFEB recommendations were very well received and fully appreciated because they helped focus some of the issues that the Working Group and the Senior Review Group had to take a look at.

The DOD smallpox response teams will be vaccinated in concert with the civilian sector, and the DHHS/CDC/ACIP recommendations have not been announced yet. I think they've been finalized, but just waiting for some fine-tuning. Next slide, please.

(Slide)

Some of the issues being discussed in the various working groups: the need to protect our military capabilities in the face of potential contingencies versus the threat of smallpox in various areas of the world; the vaccine supply and the VIG supply, we are close to finalizing a Memorandum of Understanding or Agreement with DHHS, who owns all of the vaccine at this point; the issue of an IND vaccine versus the use of a licensed vaccine; the vaccine adverse events profile for smallpox which we're very concerned about; and then the use of "just in time"

vaccination.

The policy options have been briefed on an information basis only to the Deputy Secretary of Defense and to Mr. Rumsfeld, the Secretary of Defense. We've gotten verbal approval to go ahead and begin organizing training and vaccinating the response teams. At this point, if we were to vaccinate today, we'd have to go with IND response.

The Services have been tasked to form the response teams, and the monthly -- we participate in a monthly smallpox readiness meeting with the Health and Human Services Office of Public Health Preparedness.

Any questions?

QUESTION: Questions for Dr. Diniega? I have one first. Is anyone actually getting anthrax vaccine now?

COL. DINIEGA: I think the urgent Special Missions Programs, they are getting some now, but the routine resumption is very close to being restarted.

DR. CAMPBELL: You mentioned a vaccine for West Nile in animals?:

COL. DINIEGA: Yes, there's a horse vaccine that is sort of in the veterinary IND stage. There's been no efficacy data on it, but they are using it on the horses.

DR. OSTROFF: It is provisionally licensed.

DR. CAMPBELL: What would be involved in getting a human vaccine? I mean, is that like a whole new ballgame?

COL. DINIEGA: Well, I think Dr. Ostroff knows a little bit more about the efforts on the human vaccine side because we certainly aren't working on it in the military.

DR. OSTROFF: We did a congressional briefing last Friday, with NIH participation, and there are a number of efforts being funded by NIH to develop human vaccines. It's a little bit simpler to develop an equine vaccine than it is a human vaccine. You don't have to jump through quite as many hoops.

The equine vaccine that's available is actually a kill-vaccine, which is sort of a nontraditional approach for viruses in this family which usually use live vaccines and has to be administered repeatedly to get sufficient titers in equines. NIH feels that the Chimeric Yellow Fever, or the Yellow Fever Chimera, which is the most promising one, may be started in Phase I trials as early as next January.

DR. SHOPE: Bob Shope. I think -- I haven't been part of the discussion that Steve has been in, but it seems to me that if we had a human vaccine, there would be some reluctance to use it military personnel because of the age -- the case fatality rate is much higher in older people, and I think the risk is really very small for the military group.

COL. DINIEGA: Right, for military personnel. For military use, we'd have to take a look once there's a licensed vaccine. But, you're right, the age group we would not be too concerned about at this point, and the low infectivity rate.

DR. OSTROFF: Other questions?

(No response.)

DR. OSTROFF: Thank you, Colonel. Our next update is from the Army. Col. Gunzenhauser.

DR. GUNZENHAUSER: Good afternoon. Next slide, please.

(Slide)

This afternoon I'm going to give you a brief update on three topics, you can see them up here on the slide. Before I begin on this, however, I just want to make a comment.

I think some of you know about the cluster of murder or suicides that occurred recently this summer at Ft. Bragg, and the Army has sent a mental health epidemiologic consultation team down there to assist in the investigation. They are just finishing that up now, and I understand there's going to be a report that's released early next month, I believe. And so my plan is I'll brief the Board with more details on that at our next meeting. Right now, I don't have any information from what the investigation team has found out at Ft. Bragg. Next slide, please.

(Slide)

At the last Board meeting, I discussed the early spring outbreak of Sero Group C meningococcal which occurred at Ft. Leonard Wood, summarized in this slide. During the period late March through late April, there were five cases involving

four trainees and one dependent child.

In response to this outbreak, we offered vaccine to all the community members up to the age of 29. In addition, an extraordinary mass prophylaxis campaign was conducted here the first week of May, which we gave over 6,000 trainees and associated training staff, in the first week of May, antibiotics to eliminate the agent. Next slide, please.

(Slide)

Since that time, we've had one additional case which occurred in a two-year-old family member of a soldier assigned to a Military Police Company at Ft. Leonard Wood, but that soldier had no direct contact with trainees. This case was also caused by Sero Group C.

Now, note, this case here was born on 7 June, which was after the immunization program was performed. So the child turned two after that immunization program. There had not been a plan in place to continue to vaccinate the younger population, so there's been a local decision to go ahead and initiate a vaccination program for persons between the age of 2 to 19, who newly arrived at Ft. Leonard Wood or who turned two years of age while living there. I understand that they are working on that now. There are some discussions about vaccinating nonDOD beneficiaries who may be on the schools, et cetera, and once they work those out, the plan is to go ahead with implementing that as an additional protection strategy. Next

slide, please.

(Slide)

The Army has initiated a Hepatitis B vaccination program for all new accessions, per Dr. Diniega's comments. In the Army, this was effective the first of September. This applies to all new officers and enlisted accessions, and it will apply to the cadets who arrive here next summer, the class of 2007.

Army policy allows the use of any FDA-approved Hepatitis B vaccine, and while serologic screening for pre-existing immunity is not occurring at this time, I anticipate that it's likely sometime in the near future we are going to be going in that direction, and I'm sure we'll discuss that a little bit later. Next slide, please.

(Slide)

Last topic I just wanted to give the Board a little information about is the pre- and post-deployment health assessments. Within the Army, we've really had substantial efforts to try and assure the implementation of a comprehensive medical surveillance program, and one component of this is use of the pre- and post-deployment health assessment which, as described in this slide, are administered just prior to and at the time of redeployment. I presume most folks are somewhat familiar with this requirement. Next slide, please.

(Slide)

This slide here shows the total number of pre-deployment health assessments which have been entered into a database at the Army Medical Surveillance Activity, which hosts the Defense Medical Surveillance System, since September 11. So, this is the total that have been received since 15 September last year. And this is the number of forms received for one particular week, the last one that I had received data on, and you can see that it's broken out by Service and by the self-reported location to which the individual service member is deploying.

While it does appear that many forms have been received, we continue to have a real challenge in validating forms received against lists of deployed military personnel. Next slide, please.

(Slide)

In response to this need to get a better handle on this, the Army has established four axes in which we are attempting to improve the process of collecting and analyzing and archiving the deployment health assessments.

First, we've augmented our automated what we call Medical Protection System, or MEDPROS, which is a medical readiness information system. We've augmented this to require medical sections at deployment processing sites to record information on completion of the forms. So, when a soldier goes through a medical processing site, there should be an annotation

put electronically into the MEDPROS saying the soldier has completed the form.

Second, we recognize that the current business practice of placing original health assessments in health records and then having to make copies and mail one to the Army Medical Surveillance Activity and then have another one get placed in the deployment health record is a very awkward process. So, as a result, we are currently automating the forms so that accurate information can be accessed at the time of deployment processing, and sent electronically to appropriate archives. That's the second process up here we are working on.

Finally, we are engaged with other Department of Army staff sections to obtain accurate and complete recent deployment rosters to analyze the forms we've received to date.

I indicate on here a very limited number of initiatives we've had to try to assess how well we're doing in this, and it's something we're still working on. I don't have a good summary at this point. Next slide, please.

(Slide)

The last thing I wanted to show you is a summary of the timeline for the automation of the pre- and post-deployment health assessment, which I discussed on the previous slide. You can see that there are four major milestones over here for accomplishment. The last recent milestone was the contract award, which was to occur last week. I heard on Friday

that they had just about finalized it, so if they didn't announce it on Friday, they are going to announce this week who they have selected as the contractor to support this initiative.

You can see it is pretty aggressive. The plan is, once we've selected a contractor, is to do some system deployment and demonstration within a very short period of time, and to get into some kind of sustainment of this throughout the Army within a couple of months. Pretty aggressive strategy. I'm not sure we can stick with it, but you can see what the intent here is of automating this process.

That completes my brief, and I'd be glad to answer any questions that the Board members may have.

DR. GARDNER: Can we go back to your line listing of the meningitis C, I think it's the third slide.

(Slide)

One of the things we've never really calculated is the efficacy, protective efficacy for meninx vaccines, we think it is very high. So, I'm just wondering here which of these really represent vaccine failures, and it looks like case 1, 3 and 4, and then looking at your chart, I believe case 5 received the vaccine sometime in March. Is that correct?

DR. GUNZENHAUSER: Case 5 received vaccine like three days before he became ill, so we don't really consider --

DR. GARDNER: So that's not really -- so one would consider, I guess, 1, 3 and 4 to be vaccine failures, is that

correct?

DR. GUNZENHAUSER: Correct.

DR. GARDNER: And the others would be the epidemiology of the disease, and this is out of 1,000 people -- 1100-and-something immunized, I believe -- well, that's how many you ultimately immunized, I think in your first chart -- 1160-something?

DR. GUNZENHAUSER: There was a catch-up program for trainees who had missed vaccine. There was a time period in January and another one in March, when a total of 1100 trainees had not been vaccinated. Out of those 1100, the fifth case here was one of them. The other three trainee cases shown up here had been vaccinated -- one in July of the preceding year, and the other two in January. So, only one of the 1100 is a case up here. So, we have three who had been vaccinated.

DR. GARDNER: Still a little surprising in terms of what we think of the efficacy, to have three vaccine failures, I think, in this group. That's a high number.

DR. GUNZENHAUSER: I guess I could comment that we're still looking into that. I presented at the last meeting some titer information for these cases, showing that it appeared they had good immunologic response to other components of the vaccine, but for Sero Group C, for whatever reason, these three persons had very low titers, less than an 8- or 4-fold rise -- I've forgotten exactly what it was.

DR. GARDNER: And none of these represented second immunizations, correct?

DR. GUZENHAUSER: That's correct.

DR. GARDNER: Because there is the issue of C immunization blunting further responses.

DR. GUNZENHAUSER: That's correct. I could tell you that we're still looking into this. There were some other cohorts that we've collected sera on. I know that WRAIR has analyzed them, and I think the Navy has an effort still working with the Centers for Disease Control, looking at other cohorts that received the vaccine at the same time, to look at serologic response issues. I know that at WRAIR what I heard was they had still some questions, and they are attempting to validate what they observed with other labs. So, I don't have -- if you'd like, I'd be glad to provide more information at the next meeting about the results of that.

DR. GARDNER: Thank you.

DR. CATTANI: Jackie Cattani. I know you mentioned that you don't have the final report on the murders and suicides, but I was wondering if there had been any impact on recommendation of Mefloquin (phonetic) for antimalarial prophylaxis or treatment?

DR. GUNZENHAUSER: It's a good question. There's been some question about whether or not Mefloquin could have a role in these domestic violence cases, and currently there's been

no change in policy. It has been looked at, and we don't really have evidence to suggest that there's a broad problem. We've looked at a number of different -- looked at this issue from a number of different viewpoints and, as far as I know, there's not any change in policy use with Mefloquin.

DR. OSTROFF: I had a conversation with folks from CDC who participated in those investigations, and they indicated that one of the problems that they've been having is documenting in the records whether or not people actually received that drug, and it's sort of the same chronic problem that we have many times that we start these investigations, and so the records aren't nearly as good as you'd like them to be.

DR. CATTANI: Just in response to that quickly, I don't think anyone would really consider it except that over the years there have been so many questions raised about Mefloquin, and not very many studies that have come up with definitive answers to some of these things. So, I guess there's more of a suspicion when you come up with something that appears to be unexplainable like this, where there might be association with the drug.

DR. LeMASTERS: Grace LeMasters. Have you not received any post-deployment forms?

DR. GUZENHAUSER: We have. I'm sorry I didn't post those numbers up there, but we've received I think it's in the tens of thousands order.

DR. LeMASTERS: And I was wondering, what is the primary outcome that you're going to be looking at between pre- and post-deployment, and are you doing that sort of real-time, as soon as you get post-deployment back? And I was just also wondering what's going on with the Navy, aren't they deploying?

COL. GUNZENHAUSER: Well, yeah, I won't speak for them, but their policy is a little bit different. If they are on shipboard, they are not required. So, if you know they are going to be on land for 30 days or more, then they would be required to complete the form. But if they are merely in a contingency situation where they are on a ship, they would not be required to complete the form.

So, really, in this operation, most of the people with boots-on-ground is Air Force and Army and some Marines, and that's why the forms are coming from them. But, yeah, the question is, show us who all the people are who fit that criteria and match the forms, and that's what we're trying to do.

DR. LeMASTERS: But I was wondering, you can get better compliance with pre- and post-type studies if everyone understands what it is that's the purpose and goals of the pre- and post-, so I was just wondering what is the purpose of the pre- and post-, what are you measuring?

COL. GUNZENHAUSER: Well, you could probably get different viewpoints from different folks, but my understanding of the purpose of these forms is really to assure that a medical

type of encounter occurs so that there's a last chance for someone to say, "I've got a medical problem". The questions on the pre- and post- are very simple, such as, "Have you had a major physical problem or do you have any mental health problem? Do you have the medications you need", et cetera, that are very simple questions. And if a soldier says, "No", or has a problem, at that point a provider would interview and get them into the system.

I think what we'd had were some problems before systematically where soldiers may go through medical processing without sort of an open-ended net to catch people with last-minute problems.

So, the form is intended more to assure that that process occurs, than really a method of collecting data to answer health questions. Folks that have looked at it really don't think the questions on the form are really a good measure of health. And I think -- you know, we talked before about the RAP, for example, and the need for a periodic health assessment brought here or to some other form, that would be a more appropriate tool for measuring health status of service members whereas this one really doesn't have that as an intent.

I know there's been some analyses done up at the Army Medical Surveillance Activity, but to date our primary focus has been on trying to get forms done comprehensively and appropriately, as opposed to analyzing what they mean to this

point.

DR. OSTROFF: Can I ask you to clarify what the "Other" category is, since it's the second largest group of deployees?

COL. GUNZENHAUSER: Can you answer that, Mark? I guess it's on the --

LtCOL. RUBERTONE: Basically, anything that's either left blank -- and a lot of times when they are deploying, it is either the mission is classified or they don't know exactly how to answer the question at that time. We get better and more accurate data on the post-deployment forms about where they'd been than on the pre-deployment.

So, if we can't put them into one of these three locations which sort of equates to Bosnia and Kosovo for Europe, Air Force's operations in Southwest Asia and also Afghanistan and those operations, and then anything that is U.S. location, it goes into the "Other" category. So, either it's blank or -- there are some people who fill out the forms, they go to Africa or they're going to some other location that doesn't quite fit into a deployment.

DR. OSTROFF: I'm just wondering, that must introduce some challenges in terms of analyzing the data, if you don't know where they've been.

COL. GUNZENHAUSER: Exactly. It's self-reported. They fill in some boxes, so that's very problematic. And that's

why our solution is to automate it so that as part of the business practice, the deployment cell will say this is where they are headed, so all 50 soldiers will have that indicated electronically instead of some soldier or service member writing where they think they are going.

That's why we're reluctant to get into analyzing this, because there are some issues there. Other questions?

DR. PATRICK: Kevin Patrick. My question builds a little bit on Dr. LeMasters' question, who asked part of my question, and that is the purpose of the pre- and post-deployment. And let me put this in a slightly different way.

I'm wondering if it might not strengthen the process by which this is done, to have it hypothesis-generated -- that is, to come up with half a dozen key questions that you would like this dataset to answer, and then structure this -- and, again, it would increase potentially the compliance and the utility of this to all those in the chain of implementing it -- because right now it sounds like it's much more hypothesis-generating and kind of a fishing expedition. It's really getting the data, and it's there in case somebody wants to look at it, at least as I'm hearing it, but it's a lot of work and there may be things that are sort of overarching thematic questions that you might be able to apply to the set which, over time, could improve the quality of the questions that you're asking. I mean, presumably this isn't fixed and it could change and ratchet up in

quality. So, I'd just put that on the table for discussion.

CAPT. SCHOR: Ken Schor. Just a quick comment to that. These forms are done because we are told to do them. They are decreed. They are not done for research purposes. So, it's part of trying to develop some means of surveillance which in the directives doesn't really have any research, clear research, purposes articulated. So, there are forms that are supposed to be filled out when units meet particular criteria.

DR. PATRICK: So the challenge is finding the Shetland pony in here someplace.

DR. BERG: Bill Berg, Hampton. Part of the genesis of these forms two or three or four evolutions ago was the aftermath of the Persian Gulf War, which there was a tremendous amount of criticism, but there was no health database upon which anyone could look at the so-called Persian Gulf Syndrome. And I think that, in part, accounts for the fact that you look at these forms and say, "What is this going to do to us", because when you think about what sort of data you would collect before somebody deploys so that you would have a baseline, it becomes very difficult to come up with something in otherwise healthy people.

DR. PATRICK: Well, again, having worked with the subgroup that came up with the recommendations on the RAP, in part, the RAP is supposed to address some of those issues as well, but it's obviously at a more distant time from any of the

people who might end up being deployed. And I suspect that there really may be some very good questions. That's why I say I would encourage that whatever policy infrastructure this sits within, that it be nudged again through appropriate hypothesis-driven question-asking because, again, the refinement will only happen that way rather than just shotgunning out a bunch of questions and assuming that somehow those are going to be what we need.

So, I don't know what it would take to move this further down that continuum, but it might be reasonable to think about.

DR. OSTROFF: Dr. Poland, did you -- Dr. Cattani.

DR. CATTANI: I had a graduate student that actually did a thesis on Special Operations Forces and improving pre- and post-deployment data collection, and I think one of the important things to keep in mind beyond just looking at something like Gulf War Syndrome is that when these people retire or leave the military and then attempt to get coverage by the VA, it's very important that there be some kind of record or indication in their file if something could be related to their military service that, in fact, they would be eligible for coverage.

So, one of the reasons for getting the best data on during deployment what has happened or if there had been any medical episode, it's to be able to trace that episode to some future health condition that would be covered by the VA. And the graduate student that I had was looking at an automated PDF means

of collecting data, but that was for Special Operations Forces, probably more practical than the whole military.

COL. GUNZENHAUSER: I appreciate the comments because, really, that was the intent, to sort of let you know the issues you've discussed have been issues that we've been thinking about both in terms of the content of the questions and what, as a follow-on, this will mean. Really, my message was, or is, that we're kind of focusing on making sure we've got the process right and, as we look at the data, obviously that's going to lead to some questions and some other avenues we're going to need to pursue. I appreciate all your comments.

DR. OSTROFF: Just one quick question. Are all the Services using the same forms?

COL. GUNZENHAUSER: Yes.

DR. OSTROFF: And is it possible for the Board to actually see what questions are being asked?

COL. GUNZENHAUSER: Yes. I'm sorry I didn't provide copies for inclusion. We've got an electronic version, and Col. Riddle will help take care of that. Thanks very much.

DR. OSTROFF: Thank you. Okay. Our next presentation is from Capt. Yund, from the Navy.

CAPT. YUND: I'm starting out with the red light flashing already. I think that's either a good sign or a bad sign.

(Laughter.)

CAPT. YUND: Next slide, please.

(Slide)

I have a number of brief topics. Some of them are updates from previous presentations and a couple of them are additional new things. Next slide, please.

(Slide)

Last meeting, I mentioned the mini-outbreak of Sickle Crises in Marines at Mountain Warfare Training Center. There were three confirmed cases and three probable cases. There were some recommendations that were made by the investigators at Navy Environmental and Preventive Medicine Unit 5 in San Diego, and they included that there be re-emphasized education on hydration both to staff and trainees, that oxygen be available as high as possible -- this is not a preventive measure, obviously. It was later determined that oxygen was already available as high as it could be, that oxygen went in as high as the ambulances could go, but there was reluctance to carry the oxygen farther into the ether without the benefit of the ambulance.

And another new thing was that Sickle Cell Positive trainees be tracked, or at least enumerated on a list so that we would have a reasonable baseline. This 6 out of 55 is very rough because the 55 was not based on an actual number of Sickle Trait Positive individuals, it was a population-based number.

In any case, I don't think Scott Sherman at EPMU-5

would claim that the fact that there have been no new cases since April was from his recommendations. I don't think we know why we had the 6 cases and why we haven't had any since April, but I think at least it's positive that we can report that they haven't been continuing. Next slide, please.

(Slide)

On the issue of the NHRC initial report on anthrax vaccine and birth defects, there were a number of issues, as you recall, from before and, as a result of questions about the quality of the immunization data, the electronic data, and also some questions about the major birth defect determination, there's a validation effort ongoing at NHRC. Next slide, please.

(Slide)

The first of these had to do with tracking down paper outpatient health records for -- it turns out that there were 11,000 -- out of the 30,000 women, Active Duty women, who gave birth during that two-year period, 11,000 of those records were on file in St. Louis, archived. And those 11,000 records have now all been copied and extracted. The analysis is really just getting underway.

If you remember back when they had only extracted 1500, Megan Ryan had calculated some capa statistics for agreement with plus-or-minus one day and agreement plus-or-minus seven days -- agreement, that is, between the electronic date of immunization and the paper record date of immunization. We don't

have this analysis for the entire 11,000 yet.

One thing that Megan did mention is that it looks like either, whether you're looking at the paper record or the electronic record, roughly 10 percent of military women in these two groups, regardless of whether they were pregnant or not, received the anthrax vaccine.

Now, again, we can't tell you that's exactly the same 10 percent that the electronic record is saying as the paper record, but it's just one early tidbit of information. There will be a lot more coming when Megan has had a chance to get all the analysis done. Next slide, please.

(Slide)

The other side of this validation effort has to do with the major birth defects determination, and NHRC now has an MOU with the CDC for their dysmorphologists to review the entire first year of life health records for -- ideally, it would be all 280 infants who had a diagnosis or code that indicated a major birth defect. Some of these records are going to be very difficult to find because they are in hospitals that NHRC does not have very good access to. Megan hopes that they get at least 150. What they have right now is 70 complete first year of life records, and those records will be enroute to CDC pretty soon. Next slide, please.

(Slide)

So, again, an incomplete report, lots more -- this

effort is going to take, I'd say, six to nine more months at least, before we have all the information and analysis that we will have.

Just another word about the meningitis outbreak at Ft. Leonard Wood from the Navy perspective. We had the interesting situation, which I mentioned last time, that two Navy cases out of -- both of the Navy cases were immunized on the same day with a lot of vaccine which the manufacturer later told us was Yellow Fever diluent. We are now very sure that that's not the case. There's only one digit difference between this Yellow Fever diluent identifier and the meningitis vaccine identifier. We were able to obtain 40 sera from five different groups at Great Lakes. One had received vaccine from supposedly Yellow Fever diluent. Another, the real meningitis vaccine, correctly labeled, and three other lots of vaccines -- three other lots of meningitis vaccine -- all in roughly the same time period.

I don't have hard data to show you, but what I've been able to learn from the CDC at this point, they are saying that serologically the five different groups look very similar, and they are not seeing anything obvious. And we're reassured that the vaccine that was given on the 16th of January was, indeed, meningococcal vaccine vice Yellow Fever diluent. Next slide, please.

(Slide)

Some of you will remember that the Navy and Marine

Corps has had a little bit of trouble documenting high success rates in its reportable disease efforts. This is something that there's a number of ongoing efforts through the Navy Environmental Health Center. One of these is an effort to incorporate laboratory reporting for those things that are diagnosable in that way.

Another improvement to our reporting system that has not happened yet, but is going to happen in the near future, our reporting chain has been a little bit convoluted, starting out at the reporting unit, then to the Navy Environmental and Preventive medicine Unit, then to NEHC, then to AMSA, and we are going to eliminate one of these steps in hopes that will capture more of the data. The information is going to be initially reported direct to the Navy Environmental Health Center, with a copy to the Preventive Medicine Unit.

There is a new version of our Shipboard Automated Medical System, called SAMS, that has just been released, and NDRS, the Navy Disease Reporting System, is now incorporated in SAMS, so we're hopeful that this will make disease reporting aboard ship more convenient and also bring up our success rate in reporting from ships.

One other thing is that we're crafting a Navy Message re-emphasizing the importance of reporting in order to try to get the message out there that it's not an optional activity, we really want to collect these numbers. Next slide,

please.

(Slide)

Hepatitis B for recruits, nothing really very different here from the Navy. Our Implementation Message went out in August, and I think that through a number of conversations at the GPPM, we're all implementing the congressional and health Affairs guidance in a very similar way, as far as we're covering all accessions, not just recruits, which was the actual verbiage that came down.

And, again, in the Navy, like the other Services, we're not mandating a specific product from BUMED, that decision can be made locally. Next slide, please.

(Slide)

You heard from Col. Diniega about the interim smallpox response plan, which derives from the CDC plan. We do now have that plan and some guidance to take it as an interim plan, interim guidance to implement, and the Bureau of Medicine and Surgery is in the process of chartering a formal working group to work out the Navy medicine aspects of implementing this plan. This is just a list of -- as I'm sure you are all aware, it's a complex issue with lots of moving parts, and we're getting operational Navy, through the Atlantic Fleet, Naval Medical Center Portsmouth, also Assistant Secretary of the Navy for Manpower and Reserve Affairs, and also Assistant Secretary of the Navy for Installations and Environment, because complete

implementation of a thorough smallpox response plan is much wider than a medical issue. There are things that installations are going to need to do, operational issues for ships and other operational units. And so we're beginning to work on implementing that plan. Next slide, please.

(Slide)

I just wanted to mention one word about Syndromic Surveillance. Our current Defense Planning Guidance has language in it. The only medical topic in the entire Defense Planning Guidance which directs that the Services become capable of doing Syndromic Surveillance specifically for the purpose of increasing our ability to pick up biological warfare or terrorism events early -- could also apply to chemical events, but primarily focused on biological.

The Services have multiple system which I think you've probably heard a good deal about over the last year. There are a number of different systems which don't really talk to each other. The Office of the Secretary of Defense push that Col. Gardner is very involved with, to actually dig into our practices and find out what exactly the Services have done to comply with the Defense Planning Guidance, also to, if possible, identify among those systems one which be best suited for implementation and, if possible, to transition to a unified system across all of DOD. That last one is a very tall order, and will be difficult to do. And all of this in the context of

really significant discussions about whether Syndromic Surveillance for potential biological warfare or terrorism events is even a practical thing to do. There are theoretical concerns that I've heard that this is -- if you have an event, this is not the way it's going to be picked up. In any case, there is this fairly large train moving down the track in DOD, and we don't know exactly what the final outcome will be, but many of us have been energized to think more and more about this issue.

I think that's my last slide. If there are any questions, I'll be happy to take them.

DR. OSTROFF: Dr. Berg.

DR. BERG: Bill Berg, from Hampton. I have two questions and a comment. Obviously, the Syndromic Surveillance is a complicated issue, and I'd just like to ask that in the different localities such as Hampton Roads, that the DOD facilities make an effort to tie in with their local public health departments and local civilian Syndromic Surveillance. It's a little bit artificial, as I'm sure you realize, to have DOD doing Syndromic Surveillance and Hampton Roads Health Department doing it, when we really ought to measure it together.

I don't see compatible systems, that's going to be too complicated, but at least some sort of exchange of information. And I'll just throw that out as something to think about.

My first question is on the reportable medical

events -- and I'm glad to see the Navy is moving forward on that. Would it be too much to ask you for a report on what success you've had with these at the next meeting, that's five months from now, and I would think some of these changes, like the reporting chain and the NDRS, should be beginning to show some results by then, if they are going to work.

And then my other question is on the pre-deployment health assessments, what is the rationale for excluding much of the Navy from it? And the reason I ask this -- I understand the short answer is that Naval personnel deployed on ships may be not be considered at risk, but the genesis of all of this is the Persian Gulf War almost ten years ago, and there were Navy personnel who reported Persian Gulf Syndrome, who were nowhere near land. Naval ships may be exposed in the new environment to chemical or biological warfare, and it would be nice to have some pre-deployment surveillance on them.

And then you have the example of the Cole. As I understand you, nobody on the Cole would have filled out any of the pre-deployment forms, and yet there were certainly long-term consequences of the terrorist attack on the Cole. Can you share some of the rationale for excluding most of the Navy from this deployment -- pre-deployment surveillance system?

CAPT. YUND: I really wasn't present in the discussions where that decision was made four or five years ago, that was written into the Chairman's Joint Deployment Memorandum

in '98, and that same verbiage is there in the new document from earlier in this year.

I guess the one rationale that I might be able to come up with is that deployments are a way of life in the Navy, as I'm sure you're aware, that ships are on a constant treadmill of gearing up for deployment and going out to the next deployment, and there may have been some level of decreased concern for the risk that they might experience while they're at sea, but I think that the sequence of deploying and redeploying over and over and over again made some people think that redoing these forms every 18 months or every 24 months because you're out on your routine six-month deployment wouldn't yield much, but that's a guess on my part.

I'll work backwards from No. 3 to No. 2 to No. 1. I think No. 2, your second question had to do with NDRS. I don't think I'm going to have numbers to document improvement in our disease reporting as soon as our next meeting, but as soon as there are, I'll be happy to share those.

Your first question about Syndromic Surveillance in DOD and whether we're considering doing that Syndromic Surveillance in a coordinated fashion with civilian medical health departments and treatment facilities is an excellent one, and I was a little surprised to hear it because there's only one place in the country where I know for a fact that that's going on, and that's in Portsmouth-Norfolk area where Bob Brendan runs

a system called RDSS, Rapidly Deployable Surveillance System. It's basically a version of DNBI reporting with a retracted number of categories. I think there are only six or eight categories. It's a very active surveillance. It takes a technician or an Environmental Health Officer to walk around the hospital to the clinics to collect the data on a day-by-day basis and enter it into a database. And they have been working with -- I won't say all of the hospitals in the metropolitan area, but they've actually modified some of the categories because they were categories that the civilian hospitals felt that they needed for the system to be useful to them.

So, my impression is that at least there in Norfolk and Portsmouth, there's a very excellent coordination between the Navy Medical Center and the civilian hospitals, and they are collecting data in concert. I haven't been down there to actually see that happening, but I think you're right, that it is important certainly for CONUS-based facilities and hospitals, for us to be sharing information and collecting information in a collaborative fashion because the agents and the events that we're hoping never come along but we want to be able to pick up early if they do come along are certainly not things that are going to respect the boundaries of military versus civilian life.

DR. BERG: In Hampton Roads, we've had a good start, but we've got some ways to go on DOD versus civilian cooperation.

DR. OSTROFF: Let me turn to Dana first because I imagine you probably have some thoughts about Syndromic Surveillance.

COL. BRADSHAW: Both, actually. I'm Dana Bradshaw, with the Global Emerging Infection Surveillance and Response System. As many of you are probably aware, we have the ESSENCE systems there, which is a Syndromic Surveillance system developed at GEIS and also with DARPA funding and also with the Johns Hopkins APL laboratories, originally designed actually to do Syndromic Surveillance in the National Capital Area, and was a civilian/DOD joint kind of arrangement, or cooperative arrangement.

Since 9/11, at the direction of Gen. Peak, that was enlarged to include, at least on the DOD side, ADS data from all of the military treatment facilities. And I know that both the Army and the Air Force at least have been trying to incorporate that in and, as Capt. Yund mentioned, the Navy kind of has its own version of how they do that.

But one of the things that's happened in the last year is that we've also looked at using ESSENCE data -- actually did a validation project looking at it for influenza surveillance -- and we're looking at expanding that because the URI component, or syndrome of that, actually tracks very well with the CDC's ILI, physician-reported ILI surveillance. And we would think about actually sharing that information with the CDC, for

instance. But the National Capital Area is the only one I know of that's really sharing data with the civilian community, but the potential exists to do it with other civilian communities where we have military treatment facilities.

And then just very briefly, if you haven't had a chance to read the IOM report on strategies to protect U.S. forces and what it talks about in terms of deployment surveillance and the issues of such as the RAP, I would really encourage you to read that, but this has been a very long process. And I think what we have to look at in terms of the military is that the military -- the exposures that people have is something called military service, and it's very difficult, and it's sometimes artificial, to separate what happens in garrison with what happens in a deployment because you can have something that you came into the service with or developed stateside, you can deploy and it will affect what happens to you during the deployment, and vice-versa. When you deploy, you may have something happen to you there that it doesn't manifest until you come back, and sometimes it may be a delayed period of time.

So, what I have really stressed over time is that what we need is periodic health assessments of our people. We have significant problems with people having self-reporting bias -- and the AFEB has commented on this in the past -- about problems about doing surveys of people, trying to get self-reported data, and how it gets tainted sometimes by their health

experiences later. And so periodic health assessments all the way through.

And then the short deployment health systems we talk about today, we're just trying to get minimum information in and out, logistically very difficult to complete. That's why Jeff Gunzenhauser is going through this whole process, it's so difficult to do that. And so we try and get minimum information in and out. But, really, here was one thing that's been evaluated, but there are probably other things we need to do, that's getting validated self-reported information and then couple that with the stuff that we can do through DMSS and other types of ways of surveilling our people over time and looking for health risks and also outcomes.

DR. OSTROFF: Thanks. I think there was a comment here, and then Dr. Cattani.

DR. MORRIS: See what the other comments sound like. Glen Morris. And, actually, in some ways, it's more a question to you, Steve, which is I will have to admit I have some anxiety about this locomotive which seems to be coming forward in terms of Syndromic Surveillance, and in part this may be simply my newness to this group, but I'm not clear I have a full understanding of what the target groups are, what the objectives are. I could foresee a fairly incredible amount of work being put into this, and I'm not absolutely certain that the outcomes are going to be of that much benefit, particularly if they are

not linked closely to the civilian sector, and also the whole issue of who are you surveilling -- is it just Active Duty personnel? Is it the families? If it's the families, why not work into more of -- again, a linkage in with the local communities. Has this been looked at carefully? I mean, at what level are these decisions being made?

DR. OSTROFF: Well, I might turn to our Preventive Medicine colleagues and ask that question because, quite frankly, I'm also a little perplexed and a little concerned.

CAPT. YUND: We have Dr. Gardner at the microphone in the back, and since he's got some significant familiarity with this whole project, I assume that the reason he stood up was because he could shed some light on this for us.

COL. GARDNER: I've been trying to get this pulled together the last few months, and the Syndromic Surveillance effort started really with a resident's project four or five years ago, and then has mushroomed since 9/11 to, with ESSENCE, to cover the entire MTF populations through automated data systems and the Army Data System data.

There also is a Homeland Defense funded and supported project through the Defense Threat Reduction Agency called the Biological Threat Initiative, that has the charge to develop a system of identification of a biologic event occurring on homeland territory. And they are starting a testbed site in Albuquerque next month, where they are setting up environmental

monitors and Syndromic Surveillance using ESSENCE and several other systems to test that out, and they will be putting out a Request for Proposal in the next couple of months for two other cities to try this in to see how it works in terms of being able to deal with the practical issues of both environmental monitoring and health care system monitoring to detect epidemics.

I'm attending next week a conference in New York, Syndromic Surveillance Conference, put on by the New York Academy of Medicine, and we'll learn more there about what's going on. There are a tremendous number of efforts -- at least a dozen different efforts going on in this area right now, and you will, I'm sure, get a very thorough briefing on this at the next meeting when you get the guys' presentations because that's been a part of what they are doing there.

DR. OSTROFF: I guess what my concern is that there seems to be a dozen different efforts just within DOD, and I'm just wondering -- looking at this whole issue of Syndromic Surveillance, it's very difficult to do well, and very easy to not do well, using up enormous amounts of resources. And I have real concerns when I hear about different systems being set up in the different Services, and in the GEIS system. Who is trying to make sure all of these things fit together in some reasonable way?

DR. MORRIS: And even beyond that, has someone looked at carefully what your objectives are, specifically at a

military level, and put the systems together so that they meet those objectives. I sort of have the sense of it that's, "Hey, let's do Syndromic Surveillance".

DR. OSTROFF: It sounds good.

COL. GARDNER: Those are very good questions, and those are ones that I've been pretty much charged to try to get the answers to and trying to work on it, but I can identify at least $25 million going into these efforts already.

DR. MORRIS: That's what scares me.

LtCOL. RUBERTONE: I just want to make one point, which is some of the senior leadership in the DOD and Health Affairs are falling into the trap of equating surveillance with Syndromic Surveillance. Seems like it's becoming a bit of a catch phrase. It's driven by our national security program. Also, there's a lot of money that is going to be thrown at this issue. And I think we need to be very careful, as is stated, as to really define any objectives, finding out exactly what is going to be the response when you see the graph go up for a particular Wednesday after a four-day weekend, and there's a lot of unknown answers right now. I think we've launched into it, and our leadership just needs to be educated as to there are some unknowns with just doing grouping categories and syndrome groups.

COL. BRADSHAW: Dana Bradshaw again. I just wanted to mention that specifically the ESSENCE system was set up mainly for bioterrorism surveillance, so there are only about

eight or nine syndrome groupings that were specific for what you might expect to see from bioterrorism.

What we found out, as I mentioned earlier, is those things will also pick up things like GI outbreaks. We found the Norwalk outbreak using our system. We also found that it does track the upper respiratory type grouping, does track with ILI surveillance. So, we're finding other uses for it, but I think the other important way about the way it's designed is that it doesn't require anything else from the practitioner in the field. And some of these pen-and-pencil things that have been done in emergency rooms, the clinicians really complain about that because they have to do something extra. And we report by ICD-9 codes in all our inventory clinics on a daily basis, and we can get the majority of that data within 36 hours or less. And it's in a central repository, and we just put SASS (phonetic) up there and crunch the data and output the stuff, and then it takes somebody just looking at it, analyzing it, following up on signals.

DR. OSTROFF: Jeff.

COL. GUNZENHAUSER: I just wanted to provide a comment that within the Army, Gen. Peak is the Executive Agent for Defense Medical Surveillance, and also he is Executive Agent for GEIS, the Global Emerging Infection Surveillance Response System. And within that context, he sees himself very responsible for thinking about surveillance in general. And so

within the Army, he's asked a few of us to kind get an initiative to try to coordinate better within DOD because he looks around and sees exactly what you see and that there are a lot of systems, not particularly biodefense or whatever, just that there are a lot of initiatives within surveillance, involving a lot of money, with the question of what really is there value-added? And so he's asked some folks to -- he's really charged the Medical Research and Materiel community to come up with a plan, I guess, for all of DOD, which we discuss with Health Affairs and get the other Services involved, looking at what systems we have, what the objectives are, what the gaps are, and where we need to go. So that's something at least within the Army. And we've talked with John Gardner and some others about that initiative, and so that's what we're trying to do, we're trying to bring all of the surveillance efforts together.

COL. GARDNER: Can I just say that I'm hoping that by the next meeting that we'll have pulled this all together enough to be able to bring it to the Board as a very specific question.

DR. OSTROFF: Thank you. That would be very helpful because I must -- I must say, similar to many of the comments coming back from members of the Board, I'm very concerned about what I'm hearing because I think that setting up lots of different systems in lots of different ways, some of them being very labor-intensive, some of them not being labor-

intensive, some of them being fairly sensitive, some of them being very nonspecific, et cetera, is not necessarily the direction that you want to go in and that's going to prove useful over either the short- or long-term, and it's going to waste a lot of money and a lot of resources. And so I think I'd urge, before you go all that much further with some of these systems, that we try to bring some logic to the chaos.

CAPT. YUND: I don't want to drag this on too long, but there are two other factors that make this issue even more complex. One is that the Defense Planning Guidance mandate is for whatever system we come up with to cover deployed forces out in settings where there are no automated medical systems whatsoever.

ESSENCE, I think, is clearly -- of all the electronic systems, ESSENCE is the front-runner, but ESSENCE works on ADS data, and we don't collect ADS data outside hospitals and clinics.

The other thing is that there's a fairly short time fuse that we're being asked to do all this under.

DR. OSTROFF: I understand that but, in many ways, doing it badly is almost worse than not doing it.

CAPT. YUND: I agree with that.

DR. OSTROFF: Okay. I think what we're going to do is, since we're running a little bit behind, is take a break now for let's say 15 minutes, and then if Capt. Schor doesn't

mind, then we'll come back with the Marine presentation.

(Whereupon, a short recess was taken.)

DR. OSTROFF: I note with great pleasure that Capt. Schor's presentation does not mention Syndromic Surveillance.

(Laughter.)

Go ahead.

CAPT. SCHOR: Thank you. All of us Preventive Medicine officers travel in the same circle, so one of the skills, when coming to present here, I think, is trying to find things that don't necessarily overlap and that are going to be presented by our peers. So, I'm going to try to demonstrate parsimony here and just really have six slides -- two are backup, two are intro, and two are the meat. So, if we could go to the next slide, please.

(Slide)

I just want to reflect on a couple of things that -- these two issues are like snowballs rolling down a real steep hill for me, for very different reasons. So, they have been consuming most of my time certainly in the last few months. Next slide, please.

(Slide)

A couple of issues about anthrax vaccine, I've been with this for the last three years I've been in the job, have another year to go, and have seen a fairly robust

implementation, have cranked it down over three slow-down periods, and are now trying to wake it back up, and we are hoping, desperately hoping, to start putting shots in Marines' arms this week. If the lawyers get out of our way, the uniform lawyers get out of our way, maybe that will happen.

There's just some interesting discussions about who can do what to whom, it's not whether it's a legal program or anything like that, but we're trying to get Marines protected and, as many of you know, since 28 June when the DEPSECDEF Wolfowitz signed the Policy Memo, and then 6 August is when the clinical administrative policies came out, and we've gone through some briefings with the ASDHA folks and with the AVIP folks trying to get shots in the arms. And I wanted to reflect on a couple of things that have occurred to me over this -- and this is a real hot topic for us. And there's no value-added or positive or negative, but it's just a reflection on the first thing.

This has been a real reflection on the Constitution when you have civilian control the military. Not only do we go from the military wanting to desperately get started with this vaccine as soon as it's available to protect its warfighters, but you also have the anthrax bioterrorism and the homeland security issues, and the limiting factor is the vaccine availability, and we're still working those things out.

And I will tell you that almost not a day goes by

that I don't have a General, through his or -- basically, his -- surgeon asking me when we're going to have enough vaccine to cover his Marines. And I have to say, "Well, I don't know because we're setting aside 33 to 50 percent for civilian use". So that gap is narrowing. We're working those things out. But I have a whole lot of Generals who don't think that's happening fast enough, but we're getting there, and hopefully this week or early next week we'll start putting shots in Marines' arms for Marine expeditionary units who are deploying on ships to the Persian Gulf as a routine deployment, and also for our Fleet Antiterrorism Teams and for a few other response teams who have been getting their shots all along through the limited scope.

My office has reflected in the last several weeks that in the space of about 24-36 hours, the Marine Corps Commandant, in three different ways, has said that -- basically it came down to his final phrasing -- anthrax vaccine readiness is his No. 1 go-to-war readiness issue, period. And so that's a pretty bold statement for a fairly soft-spoken Commandant. And he said that in a room filled with a lot fewer bodies than there were stars on the lapels, so they were very senior warfighting Generals. He's very concerned about this issue.

And that kind of rolls into kind of what he really took away from some briefings, not from anybody medical, but from his three-star warfighting Generals that may be called upon to prosecute a war somewhere downrange, if that comes to be. And

it's this whole very interesting issue of if you don't have a force-wide program, or at least a limited at-risk scope program, how do you get that program started in any kind of way that doesn't tell everybody that you might be doing something, especially with a vaccine that 70 percent of the Marine Corps has never seen that vaccine since the program has been essentially shut down for the last year or year and a half? That's not a surprise because 68 percent of the Marine Corps is in its first enlistment at any one given day of the year, so we have a great turnover of Marines. But we have a lot of folks that need three shots before they go into harm's way, and we have to catch them while they're getting ready to go into harm's way, and this is not an easy thing to do as the military prepares to support the President, as he tries to find his way through this national security issue that he's spoken to before the U.N.

So, I think it's a very interesting thing to understand that sort of nexus and how the Commandant has come to understand that something like anthrax vaccine preparedness is a critical issue. It's not beans, bullets, and black oil, it's not strategic airlift for him. He realizes those are huge issues, but it's that kind of an issue to him. So, that was quite a wake-up call, and certainly has galvanized our office into a lot of action. Next slide, please.

(Slide)

On a completely separate note and to bring things

up, this also is like a snowball rolling down a very steep hill. I've brought this to the Board in my updates over the last three or four updates, and I will tell you the Marine Corps is not "walking the talk", it is "running the talk". This has the highest -- despite all this other stuff with anthrax vaccine and whatever else comes down range, this has very high-level support and commitment, and commitment of nonPOM, nonbudgeted resources, to get this going in the short-term.

This has been lodged with the two-star General who runs the Training and Education Command. He owns MCRD San Diego and Parris Island, he owns the Schools of Infantry east and west, that are at Pendleton and Lejeune, where every Marine goes through either the shorter course or the longer course to make him a rifleman. He owns the OCS and the Basic School that all Marine officers go through. And he owns a whole bunch of other schools, and he writes the policy that covers all that training and readiness for the Marine Corps. So, this is a very appropriate sponsor for this. He has taken this on, and his No. 1 priority -- and he's an amazing guy to sit and listen to because he's not a real eloquent guy, but he's a brilliant guy. He's one of those people that just surprise you right and left all the time, and he wants data. He understands the issue of data-driven decisionmaking, and we're continuously educating him on what surveillance and epidemiology and all that stuff really is, and we kind of tell him what the limitations are, and the

time commitment that may be involved, and the kind of visibility we have to have as we establish a database, and he is willing to commit resources and effort to that.

So, in fact, we're going out to Southern California next week to start looking at a database that's linked into the Marine Corps Personnel System, that has been locally developed, that we're going to put on the Web hopefully to grow across the Marine Corps, that's tied into the Personnel Database that provides a wonderful database of initial run times, recruit information, all that sort of stuff, and essentially develop a longitudinal injury reporting database that will bring in health and safety data and those sorts of things.

We're going to have some central program management, and probably the first of the two people that are going to be hired is an epidemiologist. We're also going to have some additional support through what we understand to be an ORIS (phonetic) intern that NEHC, through Capt. Bohnker, has very quickly turned on for us, and so we're gathering some critical analytical mass to help drive the development of this database from the ground up, and we hope to have this database implemented at the six entry-level training schools in the next six months.

We're going to have athletic trainers, athletic training rooms at those six schools, and also some pilot sites with the operating forces. They'll get started over about the next 12-18 months, and the pilot phase will end at about 24-27

months from now. I think it's going to end much quicker because all the Marine Corps is going to want this now, as soon as they can get it. We'll probably hire upwards of 100 athletic trainers. They will be inputting data along with the Battalion Surgeons and Squadron Surgeons and the clinics supporting them, and it's just a very exciting thing that we're going to have to control a bit because exuberance may not help us here, but the Marine Corps really understands this. And they also understand this primary prevention stuff. They understand that they may have to change how they train Marines, and they really understand that, and that has been an easy thing to do.

Navy Medicine has to join on us. The new logo for Navy Medicine is "Charlie Papa", which means "steaming to assist", and they are going to look at a continuum of care which looks a lot like the next slide.

(Slide)

And I presented this before, and that is talking about primary prevention, operational risk management through rapid detection and treatment, through athletic trainers in the operating units, to what the hospitals bring when they are really broken and have to get cut on and rehabilitated. So, Navy Medicine is joining on this model.

And so there's a whole lot of moving parts here. The Marine Corps is taking charge of the two that it has resources for, which are the athletic trainers and the program

management piece which includes the Surveillance Database. Navy Medicine is aligning on that and is steaming to assist. It's a very exciting time to be doing these very disparate things, from anthrax readiness to injury prevention, but the Marine Corps has been very supportive along the way.

Subject to your questions, that's my brief.

DR. OSTROFF: Thanks very much, Ken. I think, speaking for all of the Board who were in San Diego, your presentation, I think, is very, very welcome, and it is very satisfying to see how the Marine Corps is moving forward to rectify a problem that for all of us on the Board was so obvious when we were there earlier in the year, and I think the ultimate will be that we'll have to go back to San Diego at some point and count how many recruits we see walking around on crutches, as the ultimate measure of how well the system is working, but it sounds like a great opportunity to correct a problem that all of us see, and we'd just like to see fewer Marines, both recruits and actual Marines, with these types of injuries.

CAPT. SCHOR: Hopefully that will be the outcome, and we'll be happy to let the Board conduct its own surveillance and sample surveys at San Diego, or Parris Island.

DR. OSTROFF: Either one.

(Laughter.)

Can I ask you a question concerning anthrax? Are the data-collection systems up and running to be able to do

what's necessary to monitor vaccine received and reactions?

CAPT. SCHOR: I think so, yes. We have been pushing all the units to get their SAMS databases -- we use the Navy system, the SAMS database, the Marine Corps uses that also. We've been pushing that. There's been a lot of efforts along the way to get those complete.

It's still a difficult system to work and to work well. It's been described as a very good system, but it's an absolutely unforgiving system for anybody that doesn't understand it or that makes a mistake. And that means those are junior corpsmen that are running those data entries, so mistakes are made, and it's difficult to correct those mistakes. Hopefully, as each evolution of SAMS comes out, it's easier and easier to fix, but we're going to have some evolutions with a lot of garbage data, unfortunately.

DR. OSTROFF: And if memory serves me correctly, acceptance of the vaccine was never really a particular problem in the Marine Corps, to the degree that it was in some of the other Services. What are you doing in terms of educating potential recipients?

CAPT. SCHOR: I think that's an unknown. I mean, the Marine Corps had some very public cases, they were court-martials, and all those cases were upheld in appellate courts, and there was no issue with the legality of those cases. So, I think there were -- please don't quote me on this -- 30 Marines

that were discharged in the earlier phases of the program.

I don't know how well this is going to really be received. I will tell you that the leadership, down to the mid-grade officer level, is very behind it. I think the senior enlisted folks are. But I think that is an unknown. I can't answer that question right now. We're certainly going to follow on all the education products which I think have been vastly improved by AVIP. I'm very pleased with how they've been improved. And so we're going to use those to the max.

CAPT. YUND: I was just going to mention that there was a major effort to revise the previous communication tools and I think that they are better, and I think they will be more effective this time around. And then, of course, the other thing that's probably going to help is that in the interim, during the time when we haven't had the vaccine available, we had the big major anthrax attack, the cases, and we've actually had people calling up absolutely insisting that they want their anthrax vaccine and, "Why can't I have it now, why do I have to wait three to four months?" So, there may be an effect of the last year's history.

DR. OSTROFF: I agree. Any other questions?

(No response.)

Thank you, Capt. Schor. I think our next one is Col. Woodward.

LtCOL. WOODWARD: Good afternoon. There's

certainly an advantage to being this far down the agenda for the Preventive Medicine updates, and that is that my colleagues have presented a myriad of issues that we're all working, so I am not planning to revisit all them, save one. Next slide, please.

(Slide)

What I'd like to do here very briefly is share with you some preliminary information we have about the seroprevalence of Hepatitis B surface antibody positivity in our recruits because we believe this information is actually quite interesting, and it actually may be of interest in a general public health nature as well as for decisionmakers. Next slide, please.

(Slide)

This issue, as you heard earlier, is that we now have programs in all Services to vaccine all new accessions -- ensure protection of all new accessions against Hepatitis B virus and, in implementing our programs, we had several things to consider, and one issue was whether or not we should screen recruits before vaccination or just vaccinate all recruits. And what we found is that there are very few data to guide us in terms of the prevalence of prior immunity in this age group of 17- to 25-year-olds, roughly, that enter military service. And, in fact, in some review that people such as Col. Bradshaw helped us with, the range of projected prevalence of prior immunity for this age group ranged from 5 to 40 percent of people in the 17-

to 20-year-old age group might have been protected against Hepatitis B virus, and most of that age group was through the catch-up program that's targeting adolescents to get vaccinated, but we didn't know. Next slide, please.

(Slide)

In the Air Force, our basic training program as well as our officer accession programs currently screen all of our new accessions for several vaccine-preventable illnesses -- Rubella, Rubeola and Varicella -- so we saw this as an opportunity to very simply add on Hepatitis B serology to screen before vaccinating. In other words, we already had in the Air Force the advantage of having a process in place wherein all of our new accessions, at the time they present, are screened for immunity to these several diseases, and then only those who are susceptible receive the various vaccines.

So we did the something with Hepatitis B, and what we have is some preliminary data from our Basic Training Center at Lackland Air Force Base where over a four-week period we screened about 3700 new recruits for Hepatitis B surface antibody. Next slide, please.

(Slide)

The results were pretty striking, and that is, overall, in these cohorts, 36 percent were positive for the Hepatitis B surface antibody, which is way high on the range of what people had projected. Females, interestingly, were 44

percent positive for surface antibody, and 33 percent of males.

What I'll show you in the next couple of slides, very briefly, is that there was very little variation amongst the four different time period cohorts and very little difference amongst the various squadrons that were screened. Next slide, please.

(Slide)

This first graph -- again, this displays the raw data. There's not been any statistical analysis or whatever of this, but what this shows is the six bars on the left are just different squadrons that people are divided up into, and then the bar on the right is the overall for all those 3700 tested, and what we see is consistency amongst the groups. And I don't have the demographic breakouts of these groups, so this is, again, just the raw data. Next slide, please.

(Slide)

If we look at the different cohorts -- in all these 3700 people came in -- a new group came in each week over a four-week period, that over that four-week period the findings were very consistent. Next slide, please.

(Slide)

And then we broke it out by females and males, and in these 3700 people about 28 percent were females. Again, consistently in all four time periods, all four groups starting in each week period, were all in the 40-44 percent range and the

males were in the low 30s. Next slide, please.

(Slide)

So, this is an interesting, I think, preliminary finding that suggests that the community of people from which we are selecting our basic trainees come in with a high prevalence of immunity to Hepatitis B virus. And I will just say interestingly -- but don't have the data to show -- from our officer group, the officer accessions that started at the Air Force Academy this summer, about 1200 there, it was closer to 50 percent of them were positive for Hepatitis B surface antibody when they presented there. So, clearly, for us in the Air Force anyway, this supports the screen and then vaccinate only those who are susceptible, and then, of course, this is easy for us because it's already our process is already in place.

And I would just like to throw out that I think it's possible that we could do some further studies that might be of interest on not only the seroprevalence of immunity in these age groups to Hepatitis B, but also to the other vaccine-preventable illnesses that we're screening for, that might be of interest to the public. And that's all I have.

DR. OSTROFF: Thanks very much. I think, clearly, this will provoke a number of questions. I, for one, wouldn't necessarily have predicted these findings, and I think it raises a lot of questions. Let me first open it up to Dr. Morris, and then to Greg Gray.

DR. MORRIS: Do you have any data on how many of these have self-reported prior vaccinations? Did you collect those data?

LtCOL. WOODWARD: Not on these four groups, but we had previously a couple of months before the program started, the Training Center at Lackland did actually ask recruits how many thought they had been vaccinated, and only about 20 percent thought they had been vaccinated. But it was a very informal survey that they did at the time people -- in anticipation of this program coming in.

DR. MORRIS: I mean, again, what you are saying is -- and I agree with you, the data are leaning toward the idea that screening is cost-effective in this group. The question is, could you get a further cost-effective benefit if you could eliminate those who have self-reported vaccination prior to --

LtCOL. WOODWARD: And that's a good question. What our policy states is that if they come in with documented evidence of having completed the vaccine series, that we don't even need to screen them. That counts as they have immunity.

DR. MORRIS: But you don't know what percentage of this group would necessarily --

LtCOL. WOODWARD: My understanding -- again, this was preliminary data that was sent forward -- is that this is people who were screened -- and I'll have to check because that's a good point -- I didn't check the fidelity to our policy which

says that if they have evidence of having completed the vaccine, don't test them.

DR. MORRIS: That's a pretty important --

LtCOL. WOODWARD: It is, and I think apart -- from what I'm gathering from the Training site and talking with them is that some people show up with a decent shot record, some people don't, and in fact it may be that instead of following the policy, they --

DR. MORRIS: You don't know whether this is all commerce or whether this is --

LtCOL. WOODWARD: This is after selection based on the record. That's a very good point, and I don't know. This is preliminary data that was provided to me, and I didn't have a chance to clarify it. But that's an excellent point, I'll clarify that.

DR. GRAY: This is Greg Gray. I just find that proportion astounding. I, frankly, wonder what cut-points you used. Were they standard cut-points? Did somebody validate the test? To me, it's just too high to be explained by either the portion that are getting vaccination or natural infection.

And with respect to the other comment about self-reporting vaccines, historically, I think the last ten years, different investigators have looked at that and it's always been pretty poor for these trainees.

LtCOL. WOODWARD: And to answer the question, I

don't know what cut-point they used, but I believe there is a standard out there that -- I know it's in the occupation --

DR. GRAY: Having been through this pitfall before, there are lots of tricks and mistakes you can make, and even an EIA test, if you have the wrong lens or part in the reader -- so, to me, I just find this incredible. I don't know how other people feel, but it's awfully high.

LtCOL. WOODWARD: And I guess one answer to that might be week after week after week -- I mean, that would be a systematic problem if that problem were existing in this lab testing and it happened repeatedly --

DR. GRAY: That happens frequently.

LtCOL. WOODWARD: It's possible, yes, sir.

DR. OSTROFF: Ben.

COL. DINIEGA: These results are very surprising to all of us. The GPPM take, we thought that for sure we'd all start off just giving the vaccine and not having to have to screen. The cut-off points on most of the analyses showed about 16-17 percent. But it may be an indication that it's not something wrong with the test, but how good the public health policy is out there because, you know, my understanding is many states now have made it a school requirement for Hepatitis B, as part of the push to do the catch-up in the teenage group. So, that I don't know, but I'm just saying there's been a big push on the civilian sector to do the catch-up program, and many counties

have it in as a school requirement, school entry requirement, not only in grade schools, but middle schools and high schools.

DR. OSTROFF: I'll go back and ask our Hepatitis Division how successful the adolescent vaccination efforts have been, but it's always been my impression that it's not been as highly implemented as they would have liked.

DR. POLAND: Actually, I could comment on that in California. In California, for the last three years, I think, has had a requirement entry into seventh grade, and also entry into higher education. And the kids that we're seeing -- and, of course, this is about only 40 percent of the high school graduates are going into higher education, so I don't know how that compares to the cohort you're looking at -- but in California now, they are not allowed to progress through more than one semester of public or higher education, without having begun the Hepatitis B vaccination. So, we see them. We're sort of the source of last resort. And the numbers that we've been seeing over the last year or two have really dropped. They are in the low 100s. I didn't look at this data before I came, but it's really a couple hundred probably that are in an entering class of some 7- or 8,000. So, this doesn't surprise me if a lot of your kids come from California and if it's all commerce because I think this is what is happening, at least in California, and then I don't know how many other states have the requirement, the school-based requirement.

DR. OSTROFF: If this is a relatively recent policy, then this cohort is a little bit older than that.

DR. POLAND: Well, these are 17, 18 --

LtCOL. WOODWARD: Yes, between 17 and 25, more on the younger side.

LtCOL. RIDDLE: I know from personal experience, Virginia and Tennessee are both just like that. Having a daughter graduated here and going to college in Tennessee, the requirement was in the seventh and eighth grade that they have. So, from personal experience on both of mine, yes, they are being immunized.

DR. OSTROFF: Let me ask one other question. What is the cost of the vaccine for the military?

LtCOL. WOODWARD: The Hepatitis B series cost the military about $92, for the three-shot series. Testing in the Air Force costs us $4.50 a test. Our cost-effectiveness, actually cut-point per screening was a seroprevalence rate of about 7 percent, is where the Air Force started saving money, and that's because our tests happen to be very inexpensive because the trainees are at our largest medical center where the test is readily available.

LtCOL. RUBERTONE: I know it was mentioned before by Col. Diniega, but the WRAIR is doing a study looking at the different Services, and we're going to be supplying blood in the DOD Serum Repository on 600 individuals from each Service to look

at the prevalence of Hepatitis B surface antibody. So, it can be validated -- because it does seem a little high to me. I wasn't aware of all these other programs of having mandatory vaccinations.

LtCOL. GIBSON: Col. Gibson, Health Affairs. You quoted a price of $92. Was that for the combination vaccine Hep-A/Hep-B, or was that for Hep-B alone?

LtCOL. WOODWARD: That's Hep-B alone, but the combined product is about the additive cost of just adding the Hepatitis A. I'm sorry -- $92 is the Hep-A/Hep-B product, combined. I'm sorry.

LtCOL. GIBSON: That makes sense because when we were calculating those with original figures on Hepatitis B, it was lower than $92, so that was a surprise.

LtCOL. WOODWARD: I'm sorry. It was $20 less, at the time it was $72 for the series. I'm sorry.

DR. OSTROFF: Just one other question, if you implement a screening first policy, how much more complicated is that in terms of administering the program, if you have to wait for the lab results to come back before you begin vaccinating these folks?

LtCOL. WOODWARD: In the Air Force, we already, within the first week, screen -- all of our recruits come in and get their bloods taken. They are sorted by who needs vaccine and who doesn't. Then they come back and get their vaccines within a

week after that, those who need whatever vaccine, whether it's Rubella, Rubeola, Varicella, or Hepatitis B. The process was already in place to bring back a selected part of the training population. What is added is there's a new -- that second dose also occurs during basic training, and that is an added visit that didn't exist before, but that would exist whether we screened or not. So, we've already accommodated that, and it's already up and running that way. Same thing for the Air Force Academy and our other officer accession point.

DR. OSTROFF: One more.

COL. DINIEGA: If we were to do this again next year and look at the amount of immunity in people coming into the Services, I think most people have projected maybe in eight or ten years we'd have a totally vaccinated recruit population. It may be even sooner than that now.

DR. OSTROFF: Yes. I'm really surprised by the data.

LtCOL. WOODWARD: Actually, the National Immunization Survey data did suggest -- I don't have it at my fingertips -- but did suggest that the prior immunity rate or vaccination rate would be on the higher end of that range I presented earlier on. And that's where I think part of our concern came, is that seemed -- everybody thought that that seemed higher than was possible but, of course, the National Immunization Survey is a self-reported.

DR. OSTROFF: Thank you. I think that the next presentation by Col. Jones -- he's back working on the smallpox policy, so in his place we have Col. Cox, who is going to give the presentation.

LtCOL. COX: As the title says, it's about DOD Deployment Health-related Surveillance. And I had spoken with Col. Jones, he had asked for some input, and then it turned out to be in our favor for me to just do it for him since he couldn't come. But this will have some overlap with some of the earlier presentations because we have touched on deployment surveillance. And although it is labeled "DOD", I shouldn't advertise myself as being a J-4 person. I am in the Air Force side of this work, but since we do all of the deployment surveillance for the CENTCOM area of responsibility for all three Services, it all comes through our Epidemiology Services Branch in the Air Force. That gives us some insight into what the other Services are doing as well.

(Slide)

Just to set the stage, we've all been talking about life cycle surveillance, basically, for the military, and being able to determine what may have happened to them during their career, what could be military-related as far as downstream health outcomes are concerned. And so I've just put up there the various phases of a military person's career, and some of those are easier to track than others, and some of them are quite

specific and require special systems that look only at that particular phase of life, such as recruit surveillance we've been talking about. That setting is not quite the same as when they go to their regular jobs and have homes, even if they're on-base, off-base -- off-post -- as the case may be.

The most challenging environment, though, is the deployment surveillance where we don't have our normal infrastructure, electronic facilitating agents and things like that, so that's what we're going to focus on here, is what we've done in the most difficult arena of surveillance.

(Slide)

I did want to take a minute to just talk about the three phases. We've sort of touched on that today. There's a pre-deployment phase and what we're calling here "intra-deployment", and then a post-deployment phase.

Pre-deployment doesn't impact what I do in the epidemiology realm at all, it's really the province of the Military Treatment Facilities. It's everything they do to make sure that the people who are sent are healthy and have all of the appropriate equipment, that they've had their vaccinations, anything that we can do to help prevent them from not being able to do their job -- which, of course, is critical for mission support -- and from becoming ill later down the road. So, that culminates with that last-minute check that was described earlier, the pre-deployment surveillance questionnaire which has

been forwarded to the Army Medical Surveillance Activity.

The rest of the talk will focus on the intra-deployment and the post-deployment which do have significant overlap. The whole point is to look for possible exposures, and then look for the consequences of those exposures. When you're in the field, of course, what matters to the leaders is that the short-term issues, such as injuries and immediate illnesses that appear and make people sick while they are in the field, obviously impact their ability to do the job and accomplish the mission, so we've always focused on those. But now there is this additional concern which was mentioned, about Gulf War illness-type of scenarios, and what might appear two years, ten years, or 20 years down the road, and so do we have the data -- which we found after the Gulf War we did not -- so, a little bit of this will touch on whether or not we are any further down the road towards being able to answer some of these questions.

So, the first problem is getting the data and, as I mentioned, we just don't have the same systems as we do when we're in-garrison, so that's a major challenge for us in being able to get something that we can use. Next slide, please.

(Slide)

I will mention -- there was an earlier comment that said we don't have electronic systems in the field that can do things like we do with ESSENCE and, although this is not a talked about Syndromic Surveillance, the principles are similar,

and it's been one of those spinoff categories where we've learned from each other, although I do have to make one statement. I don't consider ESSENCE to be Syndromic Surveillance because it does not use signs and symptoms as the basis for the syndrome, it uses categories based on coding. So, again, that's one of those semantic type issues about whether or not you're dealing with Syndromic Surveillance, or categorical surveillance, or some other form of surveillance.

(Slide)

But with this GEMS system I've put up here, it is an Air Force software system that's been developed over the last few years, it is employed at all of our Air Force sites in the field, and it does allow the medics on-site to capture electronic information on any health encounter that occurs, and I emphasize the word "allows" because, again, what we're talking about here is the compliance of electronic systems. And so somebody does still have to sit there and put this information into the software and it has to be put in accurately. But it does exist. It's used at all Air Force sites. The Army has been considering using it at some of their CENTCOM sites, but that hasn't come to pass yet. And the Navy being primarily based on ships, have their own system they are using, and they are collecting DNBI data as well. But this allows you to do Syndromic Surveillance because it also captures chief complaints and it has vital signs, and so you can create filters that look at the data based on the signs

and symptoms that are put in there by the technician, the nurse, the physician, the physician's assistant, the medic, whoever is actually using the system, and you can run those queries on a real-time basis whenever you like, with your local information.

Now, as far as what we do with it from a central standpoint -- it's sort of similar to ESSENCE except it's not as close to real-time because they have to send us that information electronically -- because of the concerns about prosecuting an active war or warlike situation here, it's been considered classified when it comes to this type of data, and so that's putting some further obstacles in the way of quick turnaround and what we can actually talk to open audiences about, so we have to deal with this at the Secret level now. But we do have electronic systems and they can capture individual level data -- this includes an ICD-9 cascading tree and so people can click on those.

Now, it reminds me of the comments earlier today about the West Point Academy here and their influenza that was reported and that we knew there weren't 25 cases of influenza. Well, we know that and we know that this is the same kind of situation. It requires an individual who isn't trained as a nosologist, and who may be in a hurry and may pick something that's more convenient to remember that they remember, as opposed to what's the closest to being the most accurate result, and as further evidence of that in our outpatient ambulatory data, I did

a check on a recent calendar year, and the Air Force had 6,648 cases of pulmonary anthrax, and we had 108 cases of smallpox.

So, despite the public's opinion that we're able to keep a secret, we really haven't been covering up that disease, and it represents coding errors. We know that most of the smallpox ones are miscoded chickenpox, and we know that the pulmonary anthrax were anthrax vaccinations. So, we say that because whatever we're showing you here as far as data, we have to hold that in mind, that the data isn't fully accurate yet, and having a software system doesn't ensure that you can make some of the far-reaching decisions you might like to make based on that data. So, part of the process, like you've heard earlier, about improving the deployment surveillance questionnaire system and such is all appropriate, and we have to drive towards a higher level of quality, more completeness of reporting, better representation, et cetera, before we can carry this too far, but it's evolutionary and these are important steps that we've made in the right direction.

(Slide)

The next three slides on your handouts are hidden slides to save time. They are just samples of the categories, again, I mention that this is categorical. I should mention, I already did, that GEMS is only used by Air Force sites. The other two Services usually submit things as a spreadsheet where somebody who is a medic in the field has kept track during the

week -- and I say "week" because the Joint Chief of Staff requirement currently is only weekly data submission. The Air Force has requested their sites to send it in three times a week. But, obviously, if you're looking for a BIO event and to use this kind of system to identify unusual excursions beyond expected norms and thresholds, then once a week is probably not adequate because it would be too late to administer prophylactic medications, et cetera. So, we do have to drive closer to a real-time system, and that's the move right now, is from the once a week to multiple times per week. But those are the categories, and people have to place them in those categories, and we know that they do that incorrectly.

(Slide)

These two tables that show on this slide and the next slide were just to give you an idea of what we've seen, though, with the data we've been able to collect now over a period of years, and so we do have some historical values that we can use for comparison purposes, and you can see that the DNBI rate, the Disease Non-battle Injury rate, was highest for the Somalia experience, which was a very complicated engagement and had a lot of difficulties involved with it, so it was not too surprising that they had a higher DNBI rate. At the other end, you see the Southwest Asia results which now are reflecting about six years of data that we can look at, and it's averaged out over time. Those are basically like being in-garrison, almost, and

they have very stable situations and procedures, and that's what we've found with time, is that anytime we establish a new site, the first 30 to 60 days are the most critical, and there are more injuries and such that occur with setups and getting everything working properly, and then it tends to decline with time and reaches a lower stable rate.

It is interesting, though, that some recent studies that we just finished -- and they're in the peer review process right now for publication -- show that after you have an established site, such as Prince Sultan Air Base that's been there for a number of years, that same 30 to 60 day risk period applies to each new individual that shows up on-site. So, even though the overall rates are relatively stable and lower, you as a new person are at greatest risk in those first 30 to 60 days, both for injuries and for disease. So, it covers both categories. Next slide, please.

(Slide)

Now, although the differences between the various operations are not great, when you look at the categories -- and these are just the most common categories in a comparison table between two of the operations in the last five years -- you can see that there obviously are expected variations. Respiratory illnesses in someplace like Kosovo or more norther latitude place is not going to be the same as, say, a desert environment or in other places. And dermatology and such will vary depending on

climatic and other physical conditions as well, whereas episodes of hypertension or things that might end up in the "Other" category may not vary as much. And so that's borne out and it's been shown to be the case for a number of years as well. Next slide, please.

(Slide)

To finish up, I had just put in how we're trying to use these kinds of data sources now to both enlighten and, in some cases, warn or alarm our leadership both on the civilian and the military side.

You may recall when Operation ENDURING FREEDOM was getting underway, in the early months there were several high-profile cases of crashes, whether it be helicopters or other things going on, and then there's been the more recent issues of Ft. Bragg and the domestic violence, and all of those were perceived as being possibly related to the fact that we've got this high OPTEMP, Operational Tempo, and we're sending our people out, we're expecting them to do too much. We've contracted the size of the forces and therefore they don't have as many people to do the job, and are we maybe hurting the military member because of that.

So, one of the answers or one of the ways we investigated that question was to look at our deployment surveillance data. And, again, I can't show the tables because of the classification issue, but overall the disease non-battle

injury rate for the OEF sites, the new Operation ENDURING FREEDOM sites, are running about 50 percent more than the established Southwest Asia sites, like the Prince Sultan Air Bases that have been there for years, but they are running 8 to 10 percent less than what was there at the height of Desert Storm. So, again, we expect to see something in that range, we're not outside of the expected range, based on our experience in recent campaigns. So, that, we felt, was encouraging. Obviously, we always to drive it lower, but it was nothing that we felt would be alarming.

We also looked at the suicide rates -- this is only Air Force data I'm speaking of because we have a different kind of suicide surveillance system in the Air Force than the other two Services -- and so it looks at suicides, and also looks at non-fatal self-injurious events, so-called "attempts". And, anecdotally, again, people were concerned. They thought, "Oh, Special Forces", "Oh, air combat command", "They're having lots and lots of suicides, it's gone up dramatically", but when you looked at the real hard, cold numbers, that's a lot different. We don't have the coding problems and such that we see with these outpatient ambulatory data. When you put them all on there and looked at aggregate for the Service overall, it was still a downward trend, as it has been for several years, for both the attempts and for the completed suicides.

There were some major commands that were higher than others but, again, within the expected levels of variation,

especially when you consider that suicides are still a relatively uncommon event. Even in the Services when you have 30 a year approximately, 20 to 30 in the Air Force for the entire 12-month period, it doesn't take much in one given command to change the rate dramatically.

So, you can see the kinds of processes we have and how we're trying to apply them, and I would just leave this scenario. We've talked about Gulf War. After every conflict since the Civil War, we've seen similar things. It appears this is going the same way, and history will not be changed with this particular campaign. There are a number of sites where people are returning from them with concerns, and I did want to just use that as a way to talk about these post-deployment surveys that were mentioned earlier.

You can all debate many times over what we think the ultimate goal was, and we each have a different purpose for them. But for me, as a practitioner, when I was an operational physician, one of the major failings I saw was that people came back from these sites and they maybe needed something. They might have been someplace where you needed to deal with terminal prophylaxis for malaria, but they come back. They've been deployed three months, six months. They want to be with their families. They want to go on leave. There's lots of things that arise that make it very hard for the medical community to get their hands around these people and give them the care that they

require. So this served as a checkpoint for that, if you had to fill out a post-deployment surveillance form.

Unfortunately, under the current guidance, they're simply filled out in the theater before they leave, and so then you have to rely on them bringing them back to the home station and having somebody look at it. And somebody made the comment earlier about real-time versus retrospect. Again, you can put these into a database and you can do all kinds of analyses later, but I'm most concerned about the real-time look which we've not been able to build into the cycle well yet, and there's a lot of efforts being mentioned by Col. Gunzenhauser they are going to try and fix that and make it better.

And the other side of it is this business about environmental exposures, and that's what -- the Karshikanobads (phonetic) of the world, you might have seen the articles in the Associated Press that were put on a number of the news screens about people coming back from there and saying the environmental conditions were awful, they've been exposed to asbestos and radiation, and they are going to be sick, and maybe they're sick now -- that concept, that perception among our service members is growing all the time. And it's not Karshikanobad, it's also Baghrem (phonetic), it's other places, and that's where you start to see the signs of that is if you get the chance to look at these post-deployment surveillance questionnaires. They check a box -- "Do you think you were exposed to anything?" It's very

nonspecific, it's not good for research, as was obviously identified earlier, but it gives us a chance, as medical people, to focus on those issues and find out what was going on.

So, what we've learned from that so far, we've started to do some focus groups with those individuals who have been raising concerns -- the Air National Guard, the Reserves, the Active Duty, as well as some Army units. And so they are looking at those and trying to get a handle on how they are getting the messages, the preventive medicine messages because there's a whole communication process that's supposed to occur before they go, while they are there because those are the people that know best what's going on right at that site, and then when they come back to make sure that we don't need to do something for them, whether it's a biomarker, whether it's reassurance, it all turns into a loop of health risk communication, and that's something that the Services and everybody else I know of in the world is struggling with, but this is giving us some data about how communication works in these various groups, and how we can supplement that with our surveillance to be able to focus our efforts on people that are showing checkmarks already for being concerned, get them that information early and up front, before they start thinking things are being covered up.

So, basically, deployment surveillance is a valuable tool. We're learning a lot about how to expand it, and we see many opportunities for using it in the future as part of

the risk communication process. Thank you.

DR. OSTROFF: Thank you. Questions?

DR. POLAND: I almost hesitate to ask this question in a roomful of epidemiologists, but you've really touched on something -- I'm wondering, are there qualitative methods that are being used in this post-risk assessment process that could include anthropological text analysis or those kinds of things? You touched on it with this risk communication issue. I mean, these are people who react in very human ways. And I'm wondering whether early processes that could tip off things might be better understood in a more qualitative and quantitative way? And, again, I have great respect for quantitative methods, as fundamentally an epidemiologist, I guess, but what sort of explorations are being done in that area, if any?

LtCOL. COX: I think it's more planning at this stage, although, as any scientist, I enjoy data. When it comes to communication, we're finding that we do have to deal more with emotions and perceptions, and it all ties in, and that's just another form of data. So, I don't mind addressing that, but the surveys themselves haven't leant themselves well to dealing with that. The free text areas are very difficult, of course, to deal with and to put into a database, whether you just scan them and then you have to try and use other forms of software to deal with that.

Certainly, the interactive approach of focus

groups and getting what people understand is nice, but when it's occurring six, or eight, or twelve, or six months after they come back, it's not timely enough. So, that's some of what we're wrestling with now, is how to get those into more of a real-time. As Dr. Rubertone can say, we talk about the numbers that have been put into the system, but from what we can tell those numbers usually, I believe -- he can correct me -- but it seems to average around 20 to 30 percent of what we expect should be there if we were getting all of the surveys back. And so, again, we're left wondering, well, do we only get the vocal ones that we're hearing about? Is this truly representative of the whole service member's experience? Just what kind of outreach do we need to do? There's a lot of complicating factors, and maybe he would like to expand on that.

Sort of a follow-up, in the study section where I sit, NIH Study Section, is really a combination of people that do sort of community and behavioral epidemiology, but we also have sociologists and anthropologists on this group. And I would open this up as a potential frontier that might be explored in these things because I've been impressed with the level of attempts at scientific rigor and the different ways in which these sciences know things and discover things. I'm not an expert in the area, but I think there may be something there, and there could well be things that could improve overall the quality. And as well then, this can improve the quality of the questions that those of us

who are more quantitatively oriented might be able to ask in the future. So, I would encourage keeping an eye on this.

LtCOL. RUBERTONE: I don't really have an answer, but I can address a couple of points. One of our biggest obstacles in doing analysis of the pre- or post-deployment health assessments are, as Col. Gunzenhauser pointed out, we don't really have a good denominator of who deployed, where they went, and how long they were there for. So, we end up being faced with doing sort of a numerator analysis and we look at the forms in the particular group, we look at how things have changed from the pre-deployment form to the post-, on those that we actually have a matched pair which is, as Ken said, about 30 percent of our forms actually are matched pairs. Another third are just pre-deployment forms that never had a post-deployment form. Another third are just post-deployment forms that never had a pre-deployment form.

We get about 125,000 forms a year at AMSA, and we data enter them all, but we don't data enter the comments, the text fields, we just indicate whether there is a comment. And when K-2 came out and they were concerned about the oil or the fuel spills and other things, we did go back and then we pulled up very rapidly about 4,000 forms where people indicated there was a comment. And then we did the data entry in order to analyze that.

The concerns ranged from anything regarding the

anthrax vaccine to the smell or the practices of burning human waste -- you know, a lot of comments -- but nothing really that you could sink your teeth into, I think, although it's still being analyzed by some other folks at the CHPPM.

So, just one last comment. This past month, in July, I believe, we did publish in our Medical Surveillance Monthly Report sort of a descriptive analysis of the pre- and post-deployment forms over the last two-year period, and that's available online at our Website -- amsa.army.mil -- if anyone on the Board wants to look at that.

So, we're doing what we think we can, but it's really not as extensive as I think you're implying could be done with the data. My own personal feeling is I think locally, as Ken pointed out, sort of on-the-ground clinician and the soldier or the Airman may be the most utility of the form right now, sort of that one-on-one risk communication and processing. When we collect the data centrally, we do what we can with it, but there's some limitations.

LtCOL. COX: I'll just mention, if the Board is interested in a follow-up later -- we're in the midst of these focus groups now, I've run the first one with a North Carolina National Guard Unit. I'm establishing a second one with a Minnesota Guard Unit. We're going to be visiting Ft. Drum and probably Ft. Bragg. And so we should have some good information about the communication, and then some other of these items going

on at the DOD level, to try and fix some of the processes like knowing who has been where and when they were there type of things through personnel tracking. So, another six months or so we should see a lot more to talk about.

DR. LeMASTERS: I had a question regarding your slide on intra-deployment health. You talked about exposures and looking at the physical, I assume you mean the physical and chemical environment. In your surveillance program, are you tracking both the exposures of these occupational exposures that your soldiers are having, as well as the outcome? I wasn't sure what you meant by --

LtCOL. COX: It is meant to be an environmental and disease non-battle injury surveillance program. Environmental is used in the encompassing term that covers occupational as well as physical environment. And, yes, the physical environment would include contamination, such as old underground petroleum fuel remnants as they found in Karshikanobad, or the low-level radioactive material from demolished missiles from when the Russians were there. How well that's gathered is a different story. The disease non-battle injury part is working better, it's more practiced and it's more thorough. We're working hard on incorporating the environmental data, and part of the GEMS program includes an environmental baseline survey, which is done at every site, it's just not always put into this centralized electronic system.

For instance, at many of these sites, it depends which Service is providing the base-operating support, but whichever one is doing that, they are responsible for analyzing the environment both in advance of the troops coming, to make sure that it seems to be a safe place to be, and then the ongoing surveillance for things that maybe they didn't find because you can only do so much that first time, or because of what they found it requires follow-up work and follow-on testing to make sure that the situation hasn't changed. All of that is part of the environmental collection, and that includes any occupations that they set up there as part of flight line operations or other military operations. They have their routine occupational systems, but our ability to collect and actually document that in the field has not been as good as it is in-garrison, but these new systems are making it better and, for instance, the Center for Health Promotion and Preventive Medicine, CHPPM, certainly has made extensive environmental baseline surveys which are on their classified Websites and available for anybody that may be going there to look at from that standpoint, and they will be there as historical documents later.

Our ability to interrelate those goes back to the business about not being well informed about who was where when, and until we have that, it's going to be very hard to answer these service members' questions on a self-assessment survey that says "I think I was exposed to funny yellow dust, and now I have

leukemia. The two are related and it has to be because I was deployed in the military service at that time", and to be able to give them some credence to validate that, we're going to have to have a little bit better data collection in those areas than we do currently.

DR. OSTROFF: Thanks. I think we'll have to move on. Appreciate it, Colonel.

I think our next presentation is Cdr. Ludwig.

CDR. LUDWIG: Good afternoon. I'm going to see if I can make up some time. As you can see, I have a short presentation, and most of the topics of activity in the Coast Guard are along the same lines as all the other Preventive Medicine Officers have presented, so I'm going to skip to one slide on Hepatitis B vaccination. Next slide, please.

(Slide)

On the 1st of July, we started using the combined vaccine at both TRACEN Cape May for the enlisted, and the Coast Guard Academy in New London, Connecticut, which is where not only the cadets come in, but all officer accessions go through their basic training there.

We did not mandate, like the other Services, that they use the combined vaccine, this was a local decision. And for the Coast Guard, for the time being anyway, serological testing is not currently feasible. I hope to find out from the Air Force how they do it, and see if I can translate that into

the Coast Guard training environment, but I'm now told by a number of people, in their training environments, that it couldn't be done. We'll see about that. Next slide, please.

(Slide)

HIV testing, you're going to be talking about this more later. I won't be presenting, nobody will be presenting the Coast Guard experience with this, and I thought I'd just give you a brief rundown on HIV testing in the Coast Guard. I'm not going to read it to you, I think it's pretty straightforward. I think one di reason or another people get tested more frequently. Somebody in the unit believes that this is a deployment worthy of an HIV mass test, or whatever, and it happens more frequently. Next slide, please.

(Slide)

Some of you are familiar with the Recruit and Trainee Health Care Symposium that's been held every year now for I believe seven or eight years. It was first held at Great Lakes, and then Cdr., now Captain Retired, Behr was the initiator of this symposium. It still isn't really a formalized symposium, and there has been some confusion this year over who is going to host it next year. Some people thought that the Coast Guard was going to host it. It's been sorted out. The Coast Guard is not going to host it this year. I won't announce who will host it because I'll leave that up to them, but we will host it in 2004. Cape May is going to be organizing this. And the last time that

the Coast Guard hosted the symposium, it was Atlantic City, and that was highly -- people liked that a lot. So, I would guess that we will probably have it there again. It's also a relatively cheap place to have a conference. The date is to follow. Next slide, please.

(Slide)

I am sorry to report to you that there's been another positive TST cluster again in Florida. What I'm coming up with is that I think these are -- it's not that they are occurring with increasing frequency, it's that they are coming to my attention with increasing frequency and, in a sense, I think that's a good thing because it just continually brings back to me the importance of our securing or formalizing the most effective program in terms of frequency of testing.

In this particular cluster that we had in Tampa, the greatest challenge we had was to halt the mass testing. Local Commanders just believed that the best thing to do for the Coastees was to test everybody who possibly ever could have been exposed and, as we all know, this is not a good idea in a low prevalence population, and we finally did get some high-level intervention and the testing was stopped. And then it was a matter of educating once again another group of units as to why we were not just ignoring their concerns about tuberculosis, but that we truly didn't believe that they had a tuberculosis exposure.

As far as I can determine, in querying people who have been in the Coast Guard for 20 years and in talking to Mark Rubertone's group to try to find an active case of tuberculosis in the Coast Guard, I could not find any evidence in the people that I spoke to or in the record that there's ever been an active case of tuberculosis in the Coast Guard. Now, that doesn't mean it hasn't happened, but in terms of written and memory record, it's not there.

I have an ALCOAST message written. I was told it was a little too technical, which doesn't really surprise me because I was trying to do a number of things with one message and it's just not going to work, it's going to have to be broken down into two different kinds of messages. But the first part of it will be the education, the incidence in the Coast Guard, the prevalence in the surrounding communities, the inaccuracy of the test or the reasons that it can come up with false-positives in our situation, and the disadvantages of treatment. One of the problems is that people think that there's no harm in treating. So, if we get a positive test and it's a false-positive, no big deal, we treat them and that's not a problem. Well, as we know, treatment is not benign, completely benign -- in fact, has some serious problems associated with it.

So, in my message, the policy will state that Coastees will not be tested anymore often than every five years, regardless of their occupation, and the only exceptions will be

if there's a clinical indication, obviously, or if it's directed for pre- or post-deployment surveillance per the Combatant Commander or CINC. I think there may be one other exception, but it's not coming to me right now but, anyway, you get the idea. Basically, I really want to limit the frequency of testing.

And, finally, that the reporting, although a cluster of TST positives is not a reportable incident -- well, actually, technically, it is because any cluster or anything that raises people's suspicions about a public health problem is supposed to be reportable, but the policy has not been interpreted in that way. And so the way that I've been finding out about clusters is just a variety of pathways. Well, in this new policy, I want to hear about every cluster, and I want to -- this will be, of course, after the frequency of testing is decreased because I don't want to hear about every cluster now -- but once the frequency of testing is decreased, I expect not to have so many clusters, and I'd like to know about each one of them so that I can follow up. And subject to your questions, that's the end of my presentation.

DR. OSTROFF: Thank you. This has been a long-running saga with the Coast Guard, these skin test conversion clusters, and for the life of me, I can't figure out what's unique about the Coast Guard that this seems to be so much more of a problem in your settings than in some of the other Services. But, you know, in terms of finding clusters like this, that's

part of the reason why you have baselines on all of these people at the time of accession, so that you should have some idea of whether or not these represent just nonspecific reactions or whether these are true skin test conversions. And I'm wondering, in this particular circumstance, why you think most of these were false-positives.

CDR. LUDWIG: Why they were positive?

DR. OSTROFF: Why they were false-positives.

CDR. LUDWIG: Well, the reason that I determined -- by the way, we don't ever stop treated based on that. Once it's been determined that this is a positive test, they are treated with INH or appropriate treatment for latent tuberculosis infection. But the reason that we determine that these are false-positives, first of all, is that they are not -- the cutoff that they've been using is 10mm, and I believe it should be 15mm based on the risk factors. And the other reason is that -- well, there are several things. Aplisol (phonetic) is the -- of the two tests that are available, the two tuberculins that are available, Aplisol has been associated with higher incidence of false-positives. And in both of these cases, they were using Aplisol as opposed to Tubersol (phonetic).

The other reason is that we cannot locate an active case, in any situation have we found evidence of an active case, either in the local community that was a common association for all the people who converted, or any association for that

matter. And the positives have been in different units that are quite isolated, pretty much isolated from one another.

And so epidemiologically, I think it's extremely unlikely that there's a true positive -- that they are true positives. However, do keep in mind that we don't stop treatment based on that.

The comment that you made on why it might be more -- why it might be happening more in the Coast Guard, I think that that's a complex issue, but one of the things is that Coast Guardsmen typically consider themselves at much higher risk of contracting or coming in contact with active tuberculosis because of the nature of their job. Many of them go aboard some very dirty, very foul kinds of vessels on a regular basis, and although we don't believe that this increases their risk for tuberculosis based on the quality of their interaction with the people on these vessels and the length of time that they have on these vessels, the emotional impact or the psychological impact of going aboard some of these vessels is such that I think they feel like they're going to catch something, it's just so dirty and so smelly and so -- that they're going to get sick, and TB is something they can sort of put their fingers on. And so educating the folks as to just what it takes to become infected, usually with tuberculosis, is part of the program.

I had another point about that, but it will come to me later.

DR. OSTROFF: Pierce.

DR. GARDNER: A couple of questions. As I recall, on your previous presentation your leading thought was that there was a background of atypical microbacteria that were causing this, but there were some suggestions -- people mention some tests now that are available to help sort out what some of those atypicals might have been. Perhaps you could give us a followup.

And I forgot whether you were doing the double-testing at the beginning to look for the booster phenomenon -- I think you were not at the time.

CDR. LUDWIG: Well, in terms of the two-step testing at initial entry, I actually did write that into policy a few years ago, and I expected to have a lot of comment on it when it went out for concurrent clearance, and I didn't have any comment on that. And so I kind of -- it went into policy. It was signed into policy. It's not being done, however.

DR. GARDNER: And, finally, if you are comparing Groton to Florida, were you seeing differences based on, again, we don't think there's as much atypical background in Connecticut as there is in Florida?

CDR. LUDWIG: We've had some discussion both at GPPMPIG (phonetic) and in this arena and others as well, about the atypical microbacteria, and there's been a fair amount in some distant past, but probably still has some relevance -- I believe it does -- that the prevalence of atypical or

nontuberculose microbacteria in the Southeast U.S. is higher -- and Florida may be one of the highest states.

Now, I don't recall the discussion about testing for atypicals, and I'd like to pursue that a little further, and we can do that because that would be very helpful.

One comment about that, three of the outbreaks that I've investigated have been in Florida, three of the five in the last three and a half years -- three years, basically. One was in Alaska, but of the people who converted in Alaska, a majority of them had come straight from Florida. A lot of our people go through the Southeast U.S. There's a lot of Coast Guard activity down there.

DR. OSTROFF: Thanks very much. I think, in the interest of time, we'll move on.

Our next two presenters are not here, so we're going to move on to the presentations from our British and Canadian colleagues. Col. Staunton.

DR. STAUNTON: I'm Col. Staunton. I haven't got any report for you on this occasion, however, the area which I am taking particular interest in during this conference is HIV. As you know, our policy is somewhat different in the U.K., and so there is great interest at this moment as to how you've not only developed, but will continue to develop HIV policy in the Armed Forces. So, I'm looking forward to tomorrow. Thank you.

DR. OSTROFF: Very good. Thank you. Col. Fensom?

LtCOL. FENSOM: Good afternoon. This is probably the best example of Allied cooperation I've seen in some time. I plan to use all of Michael's time. Thank you.

(Laughter.)

I'm going to present to you the results of our HLIS, Health and Lifestyle Information Survey, which I probably should be calling the "Good, Bad and Ugly" report. It's the biggest effort that we've ever done, I think, to try -- and given the limitations of survey questionnaires -- to establish a comprehensive picture, as much as we can, of where our folks are at.

So, at the risk of committing the heinous crime of airing bad laundry and dirty laundry cross-border, I'll proceed with this because there are some things that came out of this survey that we find quite disturbing, other things that reassure us that we're doing something right. Next slide, please.

(Slide)

LtCOL. RIDDLE: There are no slides for these?

LtCOL. FENSOM: I'll explain it, actually. This survey has not been officially released. It's a unique Canadian phenomenon that we have to wait for official translation into French, and that hasn't happened yet. So, I've e-mailed this, as well as the detailed Executive Summary, to Col. Riddle, and you are certainly welcome to it. He's just not going to put it on the Website until it's officially released, which we are

expecting by the first week of October. This, of course, didn't stop our diligent press members from access to information requests, and so there have been some splashy things in our newspapers grabbing at some of the juicier tidbits from the survey, so we are in the unfortunate position of having the press writing about this before it was officially released on our command chain -- never a good place to be. That's another bit of the dirty laundry.

So, the survey, given the known limitations of those, was mailed back, and we've surveyed our entire forces, Regular and Reserve, and got a higher response rate, as you can see, than we anticipated, especially since this was a multi-page questionnaire that took a good 45 minutes to an hour for most people to fill out. So, there seemed to be some motivation there, and we did a lot of pre-survey advertising as well.

It was contracted through a firm called DECIMA (phonetic) which does most of the large survey vehicles in Canada, and overall represented our population pretty well.

The aim of it was to use it to compare to a large survey done of the Canadian public a couple of years ago, but that is also a bit limited because that was an interview survey -- and we all know that written response surveys tend to have more negative responses and interview face-to-face more positive -- so we're not quite sure how to manage that comparative awkwardness.

The reason it was done was that we really felt we

didn't have a way to support the planning and evaluation of our much-expanded health promotion staffing that's come onboard in the last few years, so we wanted this survey to identify some specific issues that should be addressed. We wanted it to establish some kind of baseline for future trend analysis, and we wanted to have an assistance tool to help us identify and prioritize the needs and where we should throw resources. Next slide, please.

(Slide)

So, on the overall health status self-reported -- this is one of the items that the press had a lot of heyday with -- was worse reported by the Canadian Forces members than by members of the general public, to the tune of 65 percent overall in the Forces feeling their health was very good to excellent versus 71 percent of the Canadian public. Now, that may just be the difference between a face-to-face and the paper survey. Next slide, please.

(Slide)

Another thing that the press made a lot of was the days-in-bed due to health problems, which was unexpectedly high. We're also wondering whether or not this is a valid comparison because our survey of the Canadian public took into account government employees, self-employed personnel, and I think that there may be a large chunk of that that's just reflecting the fact that government workers overall do not have the same

constraints on taking days off to be sick and still getting paid, et cetera. So, we may need to compare apples-to-apples in that regard, and we're going to see if we can find some survey results on civilian government workers compared to military and see if there is a difference.

What was disturbing -- and this is a recurring theme -- is that the numbers broken down here were so much higher in our high-deployed group of personnel because we also included a lot of questions on deployment history. So, I'll get to that a little bit later. Next slide, please.

(Slide)

Health-related activity limitations, again, surprisingly large numbers. And there was also quite an increase in sick leave that's been taken since the last survey, which was much less extensive, done in 1996. Again, this number much higher in the subgroup of personnel who had a high-deployment history. Next slide, please.

(Slide)

This was probably the most disturbing aspect in terms of looking at our troops that have had a high OPTEMPO in the last five years. And before I get into this, I should probably give you a little bit of a profile of our Canadian Forces. Thirty percent of our Forces are under 35, 38 percent of them are over age 40, 75 percent of them have more than ten years of service, so we have a mature population, partly related to, I

think, some essential differences in the Forces compared to U.S., but partly related to quite a large downsizing that occurred seven or eight years ago. Of those, 6 of 10 have been deployed at least once in the last ten years, 18 percent have been deployed three or more times in the last ten years, 20 percent reported exposure to hostile fire, either direct or indirect, and exposure in handling of dead bodies. So, our peacekeeping deployments have not been terrifically peaceful. And 20 percent of those that had been deployed three or more times were redeployed within 12 months of their last deployment, sometime in the last five years. So,t hat's the sort of group that seems to be at-risk, and it's contributing most to this higher level of mental distress, when we drill down into the figures.

This, of course, was fruitful fodder for headlines as well. We had headlines in Ottawa talking about one-third of Canadian Forces is clinically depressed, et cetera, et cetera, so our Surgeon General has been busy responding to this. Next slide, please.

(Slide)

This was broken down to the depression aspects, and it was done using what I understand is a validated diagnostic algorithm -- again, very much higher in the group with the deployment history, and incrementally higher with increasing deployments.

The good news, I suppose, is that our Canadian

Forces members were far more likely to seek care for depression than the general population, so that was encouraging. Next slide, please.

(Slide)

We looked at social support in the questionnaire, and were somewhat surprised to see that the overall indicators of social support were quite a bit lower for all parts of our population, and surprisingly also, in the Reserve Force, we're going to drill down on that also and see if our Reserve Forces are tending to attract people from environments and from social situations where maybe the Reserve is a bit of a home or a family to them, because they seemed equally unlikely to have good support systems as the Regular Force that are moving around on a regular basis.

This particular subset was striking in terms of Regular Force females who, compared to the males, had much, much lower scores on tangible support, i.e., someone to help with child care or drive you to the doctor, and affectional support -- in other words, having anyone in their life who they felt really cared about them. Next slide, please.

(Slide)

Occupational exposures, as a self-reported issue, was interesting, and what we're taking away from that is that we need to expand on our own ability to generate data on these exposures during deployments because no one believes that 30

percent of our folks are exposed to asbestos, but they think they are and we're going to have to deal with the.

Overall in the exposures, much higher rates of exposure reported by lower ranks, by those with multiple deployments, and much higher in the Army than the Navy or the Air Force. Next slide, please.

(Slide)

We asked the tough question about satisfaction with health care, and we weren't very happy with what they had to say. We're taking that very seriously, and we're right in the middle of a primary care renewal initiative where we are working hard to try and make our base clinics the preferred caregiver for our folks. And, again, we're not sure how much of this is a reaction to the fact that they don't have much choice about where they get their health care either. So, I'd be very interested in feedback from any of the members, to assist us in how we might interpret some of these figures or insights that you might have.

The reasons that were given most often for dissatisfaction with military health care were waiting times. They felt that the capabilities were less than the civilian sector, and perhaps a bit of that "what you can't have always looks better". And many were concerned over the effect it might have on their career, seeking care, and quite a low percentage, 14 percent, were worried about confidentiality. This is, we think, probably due to the fact that three or four years ago our

Chief of Defense staff told commanders that they no longer had a right to know diagnoses without the members' consent, and so all our commanders are entitled to know is operational limitations. So this seems to have gone a long way in increasing confidence in the military medical system. Next slide, please.

(Slide)

How many felt that they needed health care and did not receive it. Again, much higher in the military than in the public. This figure, again, was much, much higher for those with a high deployment history, and it wasn't that the care wasn't available, but those folks who had had multiple deployments had more symptoms, more depressions, more lots of things, but were less likely to seek care, and their most common reason for that was that they didn't have time. So, we're not quite sure what to make of that. Next slide, please.

(Slide)

Injuries, no surprises here -- really, I think very similar to the sorts of things that Capt. Schor was talking about earlier. What was gratifying to us was that of all the preventive health programs we have in place, the one that was rated highest in terms of being useful by the troops and the officers was the Injury Prevention Program. So that's one of the things that we took away that we think we are doing right.

We have fairly extensive pre- and post-deployment education programs and post-deployment reintegration counseling

services for folks, and that was rated pretty low in terms of approval -- 30 percent felt it was valuable. So we're going to take another look at that. Next slide, please.

(Slide)

This was another popular one with the press -- "Canadian Forces is Obese" were some of the headlines. Those are a bit concerning on the face of it. We wondered how much of it would be less disturbing if there was some indication of muscle mass, especially in the younger age groups, and perhaps some hip-to-waist ratio data and whatnot, but we did find associated with this in this section of the survey, that 70 percent of our military folks qualify as sedentary -- that is, they spend at least half of their workday sitting -- and 50 percent of them spend four hours or more per day at a computer.

Contrary to your military, we did away with releasing people administratively for obesity, so we may be seeing the fruit of that policy here, so to speak, or the fat of that policy, as presently the only releases we do in obese individuals are those who cannot pass their fitness test, and most of our overweight folks do pass it. This all came about as a result of a little case that went to the Human Rights Commission and the Canadian Forces lost on that one. Next slide, please.

(Slide)

Some good news here in terms of reported job

satisfaction. It was interesting that job satisfaction increased with increasing rank, as a general pattern, but to see that 80 percent of our folks were Somewhat or Very Satisfied with their job was nice. The main factors given there were that they were able to learn, they felt that they were highly skilled, they liked the job security -- 70 percent -- and they liked the support of their colleagues. The most common negative aspects reported were conflicting demands, hectic schedule, and repetitious work. Next slide, please.

(Slide)

We looked at lifestyle behaviors, and these are just some snippets. It got into a lot of weeds here. We were pleased with the overall smoking rate decrease that we worked very hard on in terms of the preventive programs. The good news is that our soldiers spent -- reported an average of six hours a week reading, but four hours a week on the Internet and 13 hours a week in front of the TV set. So, some good and bad news there.

In terms of overall utilization of medical care, they actually were less than the average, which is again a bit unexpected compared to the civilian population because they do have, even in a socialized system, much easier access, but they average two visits a year to GPs and two visits a year to physiotherapists.

We also looked at things like sexual activity in the forces, 92 percent reported being active -- I suppose that

might qualify as good news -- 77 percent --

DR. OSTROFF: It's exercise.

(Laughter.)

LtCOL. FENSOM: It's exercise, that's right -- 77 percent with single partners, but 9 percent reporting three or greater partners in the last 12 months. There were not a whole lot of people who answered the questions on STDs, so their level of confidence in the anonymity may have fallen down a bit in some of those sensitive areas, but we did have .1 percent positive response on HIV, which was of interest to us. That actually coincides pretty closely with the number of known cases that we have in the Canadian Forces, even though we do not do any screening HIV testing. And we had a 1 percent report of herpes and a 1 percent report of genital warts in the preceding 12 months. Next slide, please.

(Slide)

Lifestyle behaviors, carrying on, no real surprises in terms of alcohol intake and, as we always knew, the Navy took the prize for the propensity to alcohol. As reported, recreational drug use was minimal. Again, I'd personally be suspicious of this, but 3 percent of Canadian Forces members reported having used marijuana in the past 12 months, but reported very occasional use, and less than 1 percent for "All others". This is hard to validate, of course, and we do not have random testing in the CF either, we have testing for cause only.

But on the surface, it would appear that we don't have a large problem there. Next slide, please.

(Slide)

In terms of what we got out of this questionnaire in deployment health is that we have an extensive deployment history now from at least 50 percent of our regular Force members that we can look at, drill down on, and incorporate into future follow-up to this survey. And if we get questions like No. 3, we'll be in a much better position to try and answer them, at least this is a start. Over the next two years, we'll be bringing online an electronic health record across the Forces, and we're hoping to incorporate follow-ons to the survey within that electronic health record, and their routine pre- and post-deployment medicals which everyone gets. Next slide, please.

(Slide)

So, again, some of the initial research options that our epidemiologists are looking at. The Point of Contact in OPI for this is Dr. Jeff Whitehead, who some of you may have met at the conference in San Diego, so he may be coming down to present some of the follow-on analysis to this because right now it's pretty much raw data. Next slide, please.

(Slide)

Major issues coming out of it is how really do we use this to compare Canadian Forces members to the Canadian general public, and I've talked about the limitations with that.

We really need to find perhaps a more comparable group of the Canadian public when it comes to access and availability of sick leave and looking at the sick-day issue, so we'll try and do that.

I think the thing that was most disturbing was that the real increase in mental health issues amongst our high-deployers seems, on the face of it, to be quite dramatic and quite real. The follow-on to that is that we are doing a fairly extensive mental health survey which will involve a very structured face-to-face interview on a large number of our folks, and that's being done now, and that should give us some more definitive answers down the road on the mental health concerns. It will also involve much more detailed questionnaire on issues around Post-Traumatic Stress Disorder.

In looking at the initial results of the survey, we did find, though, that it's a couple of years ago that CDC did a survey for your Veterans Affairs that had similar comparative results in that veterans reported generally lower health indicators than the U.S. population generally. So, that again was somewhat reassuring.

So, basically, we're viewing this as a start-point, as something to point us in the right direction, and our folks that are working on this in Health Protection would be most interested in your thoughts, if any, on it, and I commend you all to perhaps have a look at the Executive Summary which gives a

much better overall view of what really the survey covered, and I'd be pleased to put you in touch, or please send me any comments that you have about it.

Other issues north of the border recently, well, we've been taking some Mefloquin flak, I must say. There's been a fair bit in the press about the Ft. Bragg investigation, et cetera, and it's created a bit of a resurgence about our Somalia incidents and all of that.

In general, the position is that we don't have a lack of information about Mefloquin, it's been a licensed drug for a number of years now, it's had hundreds of thousands of doses, some good evaluations of side effects, and really nothing to suggest that this kind of behavior has anything to do with Mefloquin. I know our highest profile case in Canada, the fellow who tortured the Somali teenager to death, was basically, in the end, a function of a psychopathic personality where an excuse was being looked for. And so that's the message that we're continuing to put out to our folks, and we also are very interested in the results of the investigation at Ft. Bragg. But as Col. Scott, our spokesman on that issue, likes to say, "It's another pink rabbit dilemma where you're demanded to prove a negative", and that seems to be where this is heading -- prove to me that it isn't Mefloquin -- and we're resisting going down that road.

So, that's all I had, and thank you for listening.

I'd be pleased to entertain any questions.

DR. OSTROFF: Thanks. We have time for maybe one or two quick questions. It sounds to me like, with the Canadian Forces, when they are not deployed, they are in bed.

(Laughter.)

Or watching TV.

LtCOL. FENSOM: We are seeing this, actually, as a bit of an indicator that the concerns that we had are probably valid, and those concerns were that our folks have been over-deployed, that they are basically starting to wear out, and there seems to be some leanings in this direction when you get the general sense from the survey.

DR. OSTROFF: Other comments?

DR. SHOPE: What's the policy in Canada, in the Forces, on vaccinating for smallpox?

LtCOL. FENSOM: That has not been put out as yet. It is in final decisionmaking process. So, I couldn't really comment on that other than to say my expectation would be that it would be likely similar to our anthrax policy, which is on a risk analysis basis for deployments.

There's certainly the desire on the Canadian side, as there is here, to, as much as we can, go to the new smallpox vaccine and wait, if we can, to use it rather than the old vaccine, which is what we have on-hand right now. And the supply-and-demand issues on civilian and military is identical to

what Capt. Schor was discussing, with the added interesting thing in terms of vaccine immunoglobulin, which is sole-sourced out of a Canadian company called Cangene (phonetic), and pretty much every drop of it for the next several years has been purchased by the U.S. Health and Human Services, so that may be our rate-limiting factor for smallpox vaccine.

(Laughter.)

DR. OSTROFF: Yes, we appreciate the donation.

LtCOL. FENSOM: It's our contribution to the War on Terrorism.

DR. OSTROFF: Thank you very much. Why don't we do this. Why don't we take a five-minute break and let people stretch, and there's some fresh coffee out there, and then we'll come back for John's presentation on PAVE PAWS, and then call it a day.

(Whereupon, a short recess was taken.)

DR. OSTROFF: Let's get started. I want to try to finish this session before the sun goes down. Most of you will recall that we had some long sessions in San Diego earlier this year concerning the issues related to the PAVE PAWS facility. This is an opportunity for Dr. Herbold to give us an update on what's transpired over the subsequent eight or nine months, and to update us on where things stand.

DR. HERBOLD: Thank you. What the Environmental and Occupational Health Subcommittee would like to do over the

next ten or 15 minutes is bring you up to date on our what I'm going to call "garbage gobbling" activities. We've been out surfing and being exposed to a lot of different information and ideas, and you've been provided a set of 30 slides which I would like to characterize as "talking points". It was a way to organize the information and to get through the process, and so there's nothing firm about any one statement that's been stated in there, but we do want to move this along and be responsive to the Air Force Surgeon General's request for assistance.

The mini-group that has been working on this consists of Doug Campbell, Dennis Shanahan, and myself, and I have to mention the tremendous support from Col. Riddle, and also LtCol. Bruce Ruscio, who is in the room, and Mr. Jimmy Dishner, who is a senior level civilian in the Air Force, who has opened any and all doors that we have wished to have access to. And Col. Leo Crocker has been our liaison at Brooks Air Force Base who, again, has facilitated access to any information or any parties or any people that we've had a need to talk to. The other two folks on the Occupational and Environmental Health Subcommittee, which we will put to work, are Leon Malmud and Grace LeMasters, and we welcome their active participation. Next slide, please.

(Slide)

As I mentioned, three questions were posed to the Board by the Air Force Surgeon General regarding electromagnetic

frequency energy. One is, are the current exposure standards adequate to protect worker's or general population's health? Are the proposed exposure characterization and epidemiological assessments by the Air Force -- this is relative to PAVE PAWS -- adequate to determine potential adverse health effects? And is there any smoking gun out there? Next slide, please.

(Slide)

The focus is on the Massachusetts Military Reservation. It's a large installation. It's on the elbow of Cape Cod. It's shared by many units from multiple military and uniform services, Coast Guard, Air Force, Army, Guard Units, and has a legacy of environmental contamination. It has been designated a Superfund site. It's a location on a shallow sole-source aquifer, it's polluted, and there's tremendous public interest and outrage about potential health impact of it. And there are also other environmental health concerns in the surrounding area, not just the Massachusetts Military Reservation. Next slide, please.

(Slide)

Picture of it. I thought, boy, this is a piece of cake. We're going to get a trip to Cape Cod in May, and we got in there one evening. We worked all the next day, and the next night went to a public meeting, and then flew out the next morning. It was just dropped in and dropped out, kind of like dropping in and out of West Point, so you all understand. Next

slide, please.

(Slide)

General demographics are in your package. The things to note are that it's a median age of the folks in this area are older, and there's twice as many folks 62 years and over. And the other thing, I guess, from an epidemiological perspective, is that the population is relatively small, to get standardized incidence rates for unusual events. Next slide, please.

(Slide)

Actually, we should show you a shot kneeling down, looking up at the face of this thing because it is ten stories high. This picture makes it look insignificant. It does sit -- Bruce, where are you -- is it 300 feet above sea level there?

LtCOL. RUSCIO: I think 240-some.

DR. HERBOLD: It's a gradual elevation, but it is the highest point in that area, and then the phased array radar that goes out doesn't -- it comes down to no closer than a 9 degree angle to the horizontal. So, it's 300 feet above sea level there and, of course, this goes right down to the sea, and the beam doesn't come any lower than 9 degrees on the horizontal.

There are two faces of it, one facing northeast and the other facing southeast, and in prior briefings you got a schematic of the radar coverage that it gives for early warning. It operates 24/7, and has been in operation now for 24 years.

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To summarize the points that have been raised to us, there was an article in Aviation Space Environmental Medicine in 1994 that theorized that there might be a new physics-related event that might have a biological impact or adverse health impact related to phased array radar displays, and there's physics associated with it, and that's about as far as I'm going to go into it because it gets beyond my level of understanding, which actually I think is pretty good in this because we kind of focused on looking for biological outcomes and/or adverse health events, without having to make a pre-determination about the characteristics of the agent. I think the analogy would be that if we had to understand prions (phonetic) 20 years ago and make that argument, we would have missed the boat. So, in that regard, I think most of our activities were related to trying to characterize biologic impact and/or adverse health events.

This particular argument -- and I'm not saying this in a pejorative way, but thinking back on cancer epidemiology and two-step processes, this argument ignores the existence of any kind of threshold for the effect, so it makes the argument that you can go all the way down to zero and any rise in energy has some type of impact and potential adverse health effects. Next slide, please.

(Slide)

Also postulates -- my words -- that the energy hit can be cumulative, kind of saved. So, it's kind of like if I go out and I get a little bit of sun exposure today, five or six minutes, and then I go out tomorrow and tomorrow, and in a week I'd have a sunburn just as if I had stayed outside for 90 minutes today, that you save this up. And also talks to the biological effect argued is regarding membrane depolarization and then being able to increase the permeability of membranes.

So, it has a biological argument in a lot of things that we're familiar with in physiology, but then the argument is that this energy deposition causes a bio-chemical change that is associated with a whole wide range of adverse health outcomes, including birth defects, lupus, cancer, heart disease, diabetes, hypothyroidism, neurological conditions, and other illnesses. And then the argument is that this theory can be substantiated in some classified biological research that was accomplished under the guidance of the Air Force.

I'm going to take a breath now and ask if any of the other subcommittee members have anything to add at this point, to the way the argument was framed to us.

DR. SHANAHAN: Only to state that it also makes the assumption that this level of energy and frequency penetrates completely into the body, and there's a lot of discussion about how much penetration you actually get from the radio frequency energy.

DR. CAMPBELL: There's also the factor that the radiation put out is a little bit different from just standard electromagnetic radiation in that it's phased array, which means you get alternating phases of array that are intertwined upon each other, and this is one of the mechanisms that's postulated to cause a problem in that you get superimposed bursts of energy that should act differently than just continuous wave magnetic radiation. So, it makes it a little bit complicated to look at it in that term. DR. HERBOLD: Bruce, did you have anything that needed to be added to our understanding of the physiologic argument?

LtCOL. RUSCIO: I think it was added, the specific point that the facility produces a unique wave when compared to modulated or continuous wave energy, and that was stated.

COL. DINIEGA: Do you have to be in the path of the wave, and is there a distance -- dose/distance relationship?

DR. HERBOLD: That's a question that has not been articulated, whether you need to be in the path, meaning the front or the back or side scatter, and is there a distance attenuation. One would argue, from our understanding of physics, that there would be a distance attenuation inverse square law, but I haven't heard the other side articulate if they agree with that theory of physics, inverse square law.

LtCOL. RUSCIO: If I could just add one thing, is that the main beam of the facility, so everyone recognizes that

the main beam of the facility never touches the ground and it's set so that never occurs. So what the discussion is about are what's called "side lobes" that are exponentially lower in energy level that do touch the ground.

DR. HERBOLD: Next slide, please.

(Slide)

I'm switching gears a little bit and try to give you a rundown of what has been done to address this scientific argument. National Research Council is engaged, has been actually over the life of this project, and they are looking at, right now, the physics of the issue, and a report is due out imminently -- a month?

LtCOL. RUSCIO: May of '03, hopefully.

DR. HERBOLD: May of '03. Okay. So we're a little bit ahead of the National Research Council. Through the Agency for Toxic Substances Disease Registry, the Air Force has helped establish a local health department, Public Health Steering Group, to engage the locals -- is that the correct statement for that, Bruce, where that evolved from, the Public Health Steering Group that's listed up there? That's a local health department?

LtCOL. RUSCIO: That's correct, without ATSDR.

DR. HERBOLD: With ATSDR. And then the Air Force Research Laboratory is doing research, Phillips Laboratory at Kirkland, on wave form characterization, is that correct?

LtCOL. RUSCIO: AFRL at Kirkland, correct.

DR. HERBOLD: And then, of course, the Surgeon General asked the Armed Forces Epidemiological Board to look at the EPI side of this. Next slide, please.

(Slide)

That pretty much covers a lot of what you were exposed to at San Diego -- "exposed", so to speak.

We, the subcommittee, have been inundated with literature. We've been given abstracts on everything that can be found. We have been provided the full content of any articles that we feel that we wanted to follow up on, and also -- just aside -- when the subcommittee attended one of these Public Health Steering Group meetings, there were some concerns raised to us by local physicians and other folks in the community, and we pursued the literature that they brought to our attention at that point in time. Next slide, please.

(Slide)

The subcommittee attended a two-day meeting at the Air Force Institute for Environmental Safety/Occupational Health Risk Analysis and Air Force Research Lab, which actually combines the two components of radiation sciences that have done the research over the years and have also done the industrial hygiene/occupational health surveillance, so we were able to touch both communities, and we had full presentations on every aspect of the program from beginning to end. And then we also

had a briefing on the what is called the EHS program, which is Electromagnetic Health and Safety classified study. Next slide, please.

(Slide)

Additionally, since the classified study was a research report, two volumes, approximately 12 inches thick, and we didn't have time to go through it page-by-page in the two days that the subcommittee was down there getting the full briefing. I went back down to Brooks Air Force Base and touched every page of the two-volume classified study, so that I could attest that I had seen it and had an understanding of what was contained in the study. Next slide, please.

(Slide)

Then, as I mentioned, the subcommittee, along with Dr. Ostroff and Col. Riddle, went to Cape Cod. We had presentations on the system. We were briefed on what the Service Life Extension Program involved, which was exchanging 1970s computer parts for year 2000 computer parts, essentially.

We had an update on the status of health studies, and we toured the facility. Next slide, please.

(Slide)

And then we safely got our feet back on the ground after a very nice helicopter ride provided by the Army Guard. And it was really interesting because you could see the size, the acreage of the facility, and you're right on the coast on both

sides, both if you look back east and to the lowlands and then on the Atlantic Coast, on the other side. And there's heavily populated areas around the fringes of there, and it's prime Cape Cod territory, and not very far from Hyannis Port.

And then while we were there, it just so happened -- we didn't plan this -- but there was a meeting of the PAVE PAWS Public Health Steering Group. Dr. Al Price, who is a local dentist, is the chair of that group, and it consists of all the different townships, local health authorities and, boy, it was evident there that they represented different selectmen, different political constituencies, and they were working together, and we were able to see their political process. Next slide, please.

(Slide)

There was a question raised about how the actual exposure standards for radiofrequency radiation are established in the Air Force, in this country, and internationally. And so we had a discussion on how the IEEE standards are set up, and it's an amazingly open process where societies, academic institutions, agencies, industry, anybody can bring an issue or question to this process, and it's a formalized process, and the amount of information and literature on electromagnetic frequency radiation energy and concern is probably one of the most studied areas of occupational health and safety that I have ever seen. And everybody at any level of government, academia, society and

industry is welcome to participate in the subcommittee process. Next slide, please.

(Slide)

That statement then leads into the Department of Defense standards, as we learned then, are derived -- are a subset of the IEEE standards, and they are not off on a different course. And they usually follow the IEEE standards, and pay attention to the potential for any military-unique system or situation -- like, say, you are onboard ship and you are sleeping beneath some type of radar system 24/7, to make sure that there is engineering design and/or stricter standards than IEEE. So, we were, I think, reaffirmed that we felt that the process was stricter and the health physics and occupational health concerns were attended to. Next slide, please.

(Slide)

We got some synopses of what some of the health concerns were and, in many cases -- one example we have here, ATSDR, there are few completed exposure pathways for human health, although they find -- and this is, I think, the county standardized mortality ratios -- that there were some elevated disease rates in the area, and they did rate the Massachusetts Military Reservation overall as a public health hazard. So, that information is there.

The community has requested additional health consultations from ATSDR, and the potential health risk an no

adverse health effects were predicted. Next slide, please.

(Slide)

A lot of literature. Next slide, please.

(Slide)

We understand limitations of studies. We feel that for the most part the abundance of studies in different populations, by different methods, accomplished by different investigators at different points in time on different select populations probably gives us a general gestalt as to the community health hazard there. And there were no "smoking guns". Next slide, please.

(Slide)

The state and the community have been involved in looking for problems because there were higher rates of certain diseases documented in the general. They looked at breast cancer and environmental exposures, and they weren't able to demonstrate an association with any particular entity. Next slide, please.

(Slide)

There have been studies that have demonstrated elevated rates of select problems -- female lung cancer, prostate, breast, colorectal, and leukemia, but as stated -- not our conclusion, but as stated by the investigators, the outcomes vary over time and the geographic patterns do not correspond to a residential proximity to Massachusetts Military Reservation. And just an aside note, there are probably alternative explanations

of these associations, other environmental contaminants that could be likely causes. Next slide, please.

(Slide)

I think, interestingly enough, the information gathered on birth defects demonstrated that in Massachusetts overall, birth defects occurred at a lower rate than what was predicted by Centers for Disease Control estimates, and when Massachusetts as a state was categorized into five geographic regions, the southeast region, which contains Massachusetts Military Reservation, had the lowest rate of all of Massachusetts which, again, didn't give us any evidence that there was something going on there. Next slide, please.

(Slide)

We tried to explore this issue about particular populations that might be more at-risk, and the IEEE standard takes that into consideration, that there might be more sensitive populations because the claim about adverse health effects covered things from potential for birth defects to neurological to brain cancers, to blood cancers, leukemia, all different types of systems and times of development. And the safety standard is many factors below what any potential biological harm has been argued in the literature. Next slide, please.

(Slide)

I failed to bring along my cheat-sheet slide on the electromagnetic frequency radiation, but the frequency that

PAVE PAWS operates in is way down the scale of below-visible light, and it's at the bottom of the scale and, for most considerations, would be considered inconsequential. And the output of energy that has been measured by the Air Force repeatedly over the years is very low, and the calculations -- the health physicists tell you that the energy received from the radar in Cape Cod varies from 2,000 to about 10,000 times below the IEEE general population exposure standard. So, again, we're talking about a very low level of energy. Next slide, please.

(Slide)

In talking to the experts -- and the subcommittee needs to chime in if they don't agree exactly with how I'm stating this -- we do not feel that we found anybody who felt that the theoretical discussion about the new physics of this phenomenon is substantiated by available data. All the characterization, wave form characterization, has not been accomplished, but we didn't find a group of academicians or experts in the area who felt that the theoretical discussion had merit.

The classified study that we were briefed on and that I went back and reviewed, in my opinion -- I'll put my name on this one -- did not address the issues that had been presented as the problem. The classified study dealt with different issues. As an aside, we had suggested to the Air Force that they declassify the biological findings in their study, but that's

beyond our area of control or responsibility, and we do not believe that there is a cause-and-effect relationship between the argument about the theoretical phenomenon and PAVE PAWS. Next slide, please.

(Slide)

So, it appears relative to the other populations that the Upper Cape has some elevated rates of disease. The rates of any of these particular adverse health outcomes do not correspond to proximity to Massachusetts Military Reservation. There are not any current studies that have suggested or generated a hypothesis that would suggest an association between adverse health outcomes and the last 24 years of activity of the PAVE PAWS system, and we have been told that the current exposure is thousands of times below the IEEE general population exposure standard. Next slide, please.

(Slide)

I'm going to go through three recommendations that we have crafted here we don't claim any ownership if there needs to be wordsmithing or if somebody feels that we've left something out.

Our understanding, as folks who look at patterns of disease occurrence in free-living human populations' observational epidemiology, and our understanding of the physics of this and the occupational health standards and the potential for problems in either the military workers on Massachusetts

Military Reservation, the military associated families living at Massachusetts Military Reservation over the years and/or the public, we don't think that there's any indication that would say that something has gone awry with this system and that there's been an adverse consequence associated with the functioning of it. However, the National Research Council is looking at the physics of the argument, and it is -- again, the standards are based on the engineering of this, the physics, and then a safety factor that the occupational health community works into it. Next slide, please.

(Slide)

We don't feel that there has been any single epidemiological study that would cause us to say that the system's operation should stop right now until we prove the negative or take some protective measures. The aggregate of information demonstrates that there doesn't appear to be any pattern of adverse health outcomes, and there is no single current EPI study that would be an outlier in the information regarding exposure of Massachusetts' population and/or other populations in the United States around these types of energy generators.

We think it would be possible -- I'm not saying whether this should be done -- but if somebody wanted to look at potential adverse health impact in the work environment, the Air Force could aggregate all the Active Duty, civilian and contract

workers that had worked at any of the Phased Array Radar Systems over the last 24 years, however, there has been a substantial amount of literature published by other Services that have folks working in similar environments, if you agree that the characteristics of the energy are equivalent to the energy seen at the Phased Array Radar at Cape Cod. And we would support that, for any of these type questions on the public health infrastructure and the current health surveillance mechanisms, should be tuned up so that they are able to identify potential problems with any emerging technology.

DR. OSTROFF: Thank you, John. Why don't we go ahead and open it up for discussion. Let me just first ask the members of the subcommittee if they have any thoughts about the presentation for the current situation, particularly Dr. Malmud.

DR. MALMUD: I would first comment, not having participated in the study itself thus far except as an observer, that the work is extraordinarily thorough and brings this body at-large up-to-date with that which is in the scientific literature.

The energy levels that are produced at PAVE PAWS are between 10^3 to 10^4, a fraction of what the IEEE recommends as the maximal level. And looking at levels of 10^3 to 10^4 below the currently accepted cutoff point suggest that from that basis alone there is no risk to this population. That's No. 1.

No. 2, the only correction that I would make to

John's excellent presentation is that he said that there is no group of researchers who believes that this is a cause in development. I would reduce that to there not being a cluster, nor a trio, nor a duet of individuals who identify this as a problem. Other than that, I'm in full agreement with John.

(Laughter.)

DR. MALMUD: One obviously can study forever the possible effects of something that no one can demonstrate, and that decision should really be a decision of DOD, in its wisdom, after it reviews this report and other reports.

The site has not been described in its complete contamination, and I think that the group, as a whole, might want to be reminded that this is a site which has had chemical contaminants.

The rate of cancer and the rate of congenital abnormalities in that the congenital abnormalities are below those for Massachusetts as a whole, and below those that the CDC recognizes as being the rate nationally. So, clearly, if there is an effect, it seems to be salutary with respect to birth defects, but we'll accept the fact that there is no effect.

With respect to the cancers, those cancers have been related without absolute evidence to chemical contaminants elsewhere in the world, and that particular site has had chemical contaminants which have been identified by Federal agencies. And, in addition, it's in an area where there are cranberry bogs

which have been heavily salted with various agents which are intended to protect and increase the cranberry production, or at least were so in the past.

But from an engineering perspective, from a physics perspective, I can see no evidence for cause-and-effect between the increased incidence of cancer among that population and the PAVE PAWS Phased Array System. It's probably time for this to be put to rest by this body, if the DOD agrees.

DR. SHANAHAN: This is Dennis Shanahan.

DR. MALMUD: I would live there if I was assured of bottled water -- (laughter) -- and I say that in all seriousness. It's a beautiful area of the state, and my only concern there would be the drinking water which undoubtedly must be contaminated given the nature of the soil and the contaminants that are known to be there. But I have no anxiety about my wife and my two young children living there with me for the summer, if I were granted that space. Thank you.

DR. OSTROFF: I must confess, after having been there, that many other people share you desire to live there because there are very well-to-do housing projects springing up in relatively close proximity to the borders of this facility. So, obviously, it's a very desirable place for people to move to.

DR. SHANAHAN: Sorry, didn't mean to interrupt. There are several points I'd like to make. One is that -- also associated with potential groundwater contamination -- is the

fact that there's a heavy reliance on wells in that area. I think the number quoted to us was somewhere around 70-75 percent of the communities on Cape Cod rely on wellwater as opposed to community-supplied water, so that certainly is an important issue for the community.

Secondly, to point out that the theory upon which the concerns is at this point highly theoretical. It has been proposed by one individual, and supported by perhaps one other individual, that we were able to find out, and that there is general lack of support for the theory within the field. There have been a number of rebuttal articles written to the initial articles. So, the basis for concern at this point is highly theoretical, and we didn't pay a lot of attention to that particular issue other than to try to understand the argument, and then went on, as John pointed out, to look more for the BIO effects, and I think John gave a good summary of the BIO effects and that we were not able to find anything, in anything we looked at, to really raise our level of concern.

But the fact of the matter is, at least for myself personally after looking at all this material which was quite extensive, is that we do not feel, or I do not feel, that there's a scientific basis for concern in that area. In fact, I'm impressed by the number of studies that have been done on that population for these particular issues -- and it's probably one of the most heavily studied populations in the United States --

but that doesn't circumvent the fact that there's tremendous concern amongst the community about at least the study showing higher incidences of cancer. And I'm not sure, as a body, it's sufficient for us to simply say that there is not, at this point, scientific evidence to support a concern because I think that skirts the second issue, which is more emotional and political than it is scientific. And I don't have, in my own mind, a clearcut guidance in terms of how to address that issue, but I do fear that a blanket recommendation from this body that there's no reason to do anything more will -- it may not be entirely the best approach to take.

I don't know if I made myself clear on that point, but I think we're dealing not with entirely a scientific issue at this point. I think it is important for us to keep that in mind as we deal with those particular issues. That's why you see a recommendation, essentially, that says although we haven't found any scientific evidence to support the concern, by the same token, we've tried to address the issue of given that and addressing the emotional and political issues, what more should or could be done, and that's why you see some actual potential recommendations for study, and particularly for the fact that to understand the PAVE PAWS and that it's a phased impulse signal, it's not unique -- and, particularly in the military, these kinds of arrays appear pretty much standardly in a lot of the Navy radar systems, and even now we're seeing phased array systems

being used in the air traffic control system in the United States. So, these are not entirely unique facilities, but there's a lot of exposure to phased array.

So, those are the only other things I would add as far as our deliberations went, but we certainly tried to look at all these aspects.

DR. OSTROFF: Dr. LeMasters.

DR. LeMASTERS: My only comment in response to what Dennis just said was I understand the emotional issues regarding communication, and I think maybe there needs to be a recommendation in regard to communicating back to at least that Public Health Committee, but if we leave it with a recommendation that a State Cancer Registry and State Birth Defects study should be done, wouldn't that lend some credence to the fact that we think there could be penetration of RF and actually could affect cancer or birth defects? I mean, it's almost as if we're giving a double-message if we're making this recommendation, and I would be very confused if I saw this along with the physics -- my understanding at least -- of the physics of the radiofrequency.

DR. OSTROFF: Well, at least my perspective from having been there, I think that there is genuine long-standing concern on the part of the community for a whole variety of reasons, and there is some evidence to suggest that there are higher levels of certain adverse health outcomes within the community, without any question, and I think these are long-

standing. And whatever the cause happens to be, I think somehow, to a certain degree, it's been displaced onto this particular facility. And while I think what the Board is trying to say is that while there's no scientific justification for that particular displacement, there still are reasons to follow the community along in terms of the adverse health outcomes, and that's a very appropriate role for the state authorities to be doing, and to try to hopefully, ultimately, figure out what the cause is of the increased rates of adverse health outcomes.

DR. MALMUD: I absolutely agree with you. I think, in a sense, that to suggest a continued study of the physical components of PAVE PAWS on this population would be to do this population, whose anxiety I can identify with and about which I am concerned, would be to do them a disservice in continuing to look for a source of the problem in PAVE PAWS when there may be a very obvious source of the problem in ground contaminants and other chemicals that are still on the Superfund site.

Let us not pursue the wrong issue and assist a population in avoiding dealing with what may very well be the cause of their problem, and that is the chemical contamination of the area, not the 1 over 10^3 or 10^4 waves under the IEEE limit that probably, to a great degree of certainty, is not causing their problem.

DR. CLINE: The committee cited over 40 public

health studies. It's not clear to me -- and I assume that all of these looked at hypotheses other than PAVE PAWS, or at least most of them, influence on the elevated cancer. What were the outcomes of these studies? Did they tell us anything and help us help direct further investigations along these lines? And I guess let me also ask, they say Upper Cape population "appears" to have elevated rates of these cancers, how strong, in your opinion and the opinion of your group that looked at these data -- how convinced are you that they're real and that they're not an aberration of the age distribution and other factors?

DR. HERBOLD: Well, let me speak to two issues that you've raised, and then ask the rest of the committee to make some observations. There are 40 studies, or 50 studies -- and I can't quote them off the top of my head -- but there were some studies that showed association with some cancers and I believe leukemia and some others, with living in the area, but nothing that pointed towards an association with a biological argument of proximity to an emitting source and then a reduction, inverse square law, that the rate of the condition reduced proportionately the further your residence was away from the source.

So, there were different types of studies that had been promulgated for many different reasons because of the multiple sources of contamination in the area -- industrial activities over the past, contamination of the shallow aquifer,

the agricultural activities with the cranberry bogs. So there have been a lot of issues studied there not related to radiofrequency. So, that's the background as to why the multiple studies and the multiple hypotheses.

My statement about "appear" represents my bias about standardized incidents and standardized mortality rates at the group level of analysis, of county or census track. We've had some studies done in the Bear County area, and the process of crunching some numbers and comparing standardized ratios without counting the actual people, you take census track data and group level data, and then take reported outcomes either in registries and/or death certificates or birth certificates, and it leads you -- I would call these studies hypothesis-generating, that they say there are some differences. And it's similar to when we first put out the cancer atlases in the United States. We saw some geographic patterns of cancer, but in many cases it wasn't necessarily an association between place where you lived and a risk of that cancer. It might have been an indication of a particular activity that you were involved in or a particular industry that you worked in. So, that's why I used that fudge word, and it probably expresses a bias on my concern about standardized ratios in many instances.

DR. OSTROFF: Let me just interrupt, since it is now after 6:00 and we've gone a bit over our allocated time. I would like to propose that we request the full committee -- or

the full Board, I should say -- that we put a proposal for a vote to determine whether the Board should endorse the recommendations that have been developed up to this point by the subcommittee, and I certainly, for one, endorse the work that's been done. I'd like to compliment John, in particular, for the tremendous effort that he's been putting in on this particular issue. And I'd also like to compliment Col. Ruscio, who I think has really done a tremendous job and service to the community in trying to, on a continuous basis as one that's there, address their particular concerns not only about this facility, but about other public health issues, and I think that that should go on the record.

DR. LeMASTERS: Could we vote on the recommendations separately rather than as a package? I mean, there's two primary recommendations.

DR. OSTROFF: I don't have a problem with that.

DR. HERBOLD: Just an addendum, I forgot to mention there were three questions asked by the Air Force Surgeon General, and one of the other questions we can't address yet, which was are the plans being proposed by the local Public Health Steering Group adequate to address any concerns?

We've been asked by the Public Health Steering Group to review the statements of work and also the responses to the RFPs that come in, just to say, "Hey, there might be a problem here", and that's coming down the pike over the next couple months. So, that piece will -- we need to go back to the

context of the questions as to which answer fits which question. And I think it would be entirely appropriate to vote on them, discuss them, separately because we want to give the best advice that we can that's relative to the question that was asked.

LtCOL. RIDDLE: I had Lisa put the three questions up here. We have Question 1, which looked at the exposure standards, and then Question 2, and Question 2 is, really, we're waiting upon a document from the Public Health Steering Committee that's being developed with them in coordination with the Air Force. And then Question 3 really is is there any need now -- do we see a need, based upon available data, to say that, by golly, tomorrow we need to go out and start an epidemiologic investigation, looking at potential adverse health outcomes associated with PAVE PAWS. And then the first question is, do we think the IEEE standards in that process have given us a level of confidence that workers' health and general populations' health is protected?

DR. HERBOLD: Just to clarify this -- and somebody jump in if I'm misstating this. I think the only question that we are answering right now is the third one, is there any indication to support immediate initiation of further EPI investigations? I think we are suggesting that, no, it doesn't look like there is something special that needs to be done.

On the first question there, are the current exposure standards adequate, we could defer to the National

Research Council deliberations, which I think are addressing that right now, but the background information I gave you was that -- I think indicated that the Department of Defense doesn't have different standards than what are acknowledged nationally as the appropriate standards. They haven't gone out and developed their own occupational health and safety standards.

And then as Rick indicated, the second cozen is, it hasn't been put before us.

DR. OSTROFF: I haven't heard anything that suggests, in terms of Question No. 1, that those standards are inadequate, and I would be supportive of saying something like that with the caveat that this is being addressed by the National Research Council, and if their findings are different, we would take that into consideration at a future date when they finally come out with their report.

(Simultaneous discussion.)

DR. MALMUD: What's the cozen on the table now? Was there a motion, and how has the motion been changed? I thought that Dr. Ostroff had made a motion.

DR. OSTROFF: My original motion was to have the Board endorse the recommendations that were in the report. I'd be happy to ask the Board, instead, to vote on each of these particular questions at this point, if you think that's more appropriate.

DR. MALMUD: Can I make the motion?

DR. OSTROFF: Sure.

DR. MALMUD: We deal with Item 3 first, if we may, and I would make a motion that there is no indication to support either initiation or further epidemiologic investigations on the potential adverse health outcomes of the electromagnetic waves of PAVE PAWS.

DR. OSTROFF: Is there a second?

DR. LeMASTERS: I'll second it.

DR. OSTROFF: All in favor?

(Ayes.)

DR. OSTROFF: Any opposed or not voting?

(No response.)

So be it.

Regarding Question 1?

DR. MALMUD: I'll stick my neck out and make the following motion, that even if the current exposure standards were reduced to 1/1000th of their present level by the IEEE, this population would still not have proven to be at risk and, therefore, the current exposure standards, if maintained by the IEEE, would be adequate to protect the general population's health.

COL. DINIEGA: Steve, I have a question on this one. Is there a feel for what the NRC is going to recommend in May?

LtCOL. RUSCIO: Bruce Ruscio, Health Advisory to

the Massachusetts Military Reservation dealing with this issue. The question posed to the National Research Council is basically looking at the question of the difference between the continuous wave and the phased array question. The question, I think, is phrased something like does the continuous wave biological data -- is that appropriate for the standard for phased array systems. So that's the question that they're looking at, they're looking at the biological data, the physics of it, and will essentially ask the question if the IEEE -- when they deal with that issue, they'll be answering the question is the IEEE standard is appropriate. That's the single question that they have to address.

DR. OSTROFF: Is there a second to Dr. Malmud's motion?

VOICE: Second.

DR. OSTROFF: In favor?

(Show of hands.)

Opposed?

DR. HAYWOOD: Abstain on that one.

DR. OSTROFF: Let the record show Dr. Haywood is abstaining.

And regarding the second question, I think we're all in agreement that that's currently not answerable since we haven't seen what the Public Health Steering Committee is going to bring to the table, and I would propose that when they do

bring something, that it be considered by the subcommittee that's been reviewing this particular issue and that we can consider this particular aspect of it when the report is available. I'll make that motion. Is there a second?

DR. CLINE: Second.

DR. OSTROFF: All in favor?

(Show of hands.)

Opposed?

(No response.)

Thank you very much. It's been a long day. My apologies for the very long agenda, but it just illustrates how many different issues that we have to discuss, and we'll try to be much more punctual tomorrow, since many of us will have planes to catch and other places to go to. So, with that, I'll call the meeting to adjournment for this evening. Rick, do you have any comments about dinner?

LtCOL. RIDDLE: 6:45, our reservations are at 7:00, and so we won't walk in until 7:00. That gives folks 45 minutes. We'll meet here in the lobby of the hotel, and they have a separate area reserved in the dining room.

(Whereupon, at 6:20 p.m., the meeting was adjourned, to reconvene at 7:30 a.m., September 18, 2002, in the same room.)